Oracle® Essbase

Scripting Reference for Oracle Essbase

F17647-16
August 2024

Oracle Essbase Scripting Reference for Oracle Essbase,

F17647-16

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Scripting Reference Overview

You can use MaxL and the Essbase Command Line Interface (CLI) to perform operations in Essbase using scripts and shell-interfaces. This reference is intended for advanced users who need detailed information and examples.

MaxL is a language interface for administering Essbase, and the CLI is a command interface. MaxL statements begin with a verb, and enable you to perform actions on Essbase artifacts. CLI commands have a variety of options to help you specify what you want to do. Report Writer is a text-based script language that you can use to report on data in cubes.

This document provides examples based mostly on the Sample Basic cube, provided with Essbase as a template you can build into a cube. The Sample application, as well as more samples you can build, are available in the Applications > Demo Samples section of the gallery. The gallery is available in the Files section of Essbase. See Explore the Gallery Templates.

About the Scripting Reference

This Scripting Reference describes language and command interfaces available for Oracle Essbase. This reference is intended for advanced users who need detailed information and examples to perform operations on Essbase.

This document provides examples based mostly on the Sample Basic cube, provided with Essbase as a template you can build into a cube. The Sample application, as well as more samples you can build, are available in the Applications > Demo Samples section of the gallery. The gallery is available in the Files section of Essbase. See Explore the Gallery Templates.

To use this document, you need the following:

- A working knowledge of the operating system.
- An understanding of Essbase concepts and features.
- An understanding of the typical database administration requirements and tasks, including calculation, querying, security, and maintenance.

About Aggregate Storage Cubes

Consider using the aggregate storage model if the following is true for your database:

- The database is sparse and has many dimensions, and/or the dimensions have many levels of members.
- The database is used primarily for read-only purposes, with few or no data updates.
- The outline contains no formulas except in the dimension tagged as Accounts.
- Calculation of the database is frequent, is based mainly on summation of the data, and does not rely on calculation scripts.

Some MaxL grammar is applicable to aggregate storage mode, and some MaxL grammar is not relevant. To learn which statements are supported in aggregate storage application and database operations, see MaxL Statements (Aggregate Storage).

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Essbase Command-Line Interface (CLI)

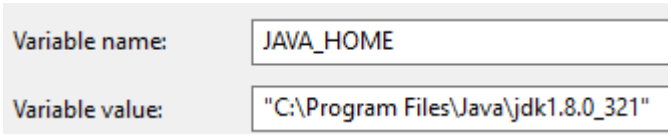
The command-line interface is a non-graphical command shell utility based on the Essbase REST API. Using the CLI, administrators can enter shell commands to perform actions on Essbase.

- Download and Use the Command-Line Interface
- CLI Command Reference

Download and Use the Command-Line Interface

Download the Command-Line Interface (CLI), available for Windows and Linux, from the desktop tools in the Console in the Essbase web interface

1. If it is not already installed, download and install Java SE Development Kit 8 from Oracle Technology Network.
2. Set the JAVA_HOME environment variable on your system to point to the JDK installation folder. If the installation path has any spaces, enclose the path in quotation marks. On Windows, restart the computer after setting JAVA_HOME.



3. In the Essbase web interface, click **Console**.
4. In the Console, go to **Desktop Tools** and expand **Command Line Tools**.
5. Click **Download**

   next to the utility labeled **Command Line Interface (CLI).**
6. Download `cli.zip` to a local drive. For best results, choose a path that has no spaces; for example, `C:\Oracle`.
7. Uncompress `cli.zip`, and see the extracted files under the `cli` folder.
8. To issue commands interactively,
   a. Navigate to the CLI folder containing the shell script, `esscs.bat` or `esscs.sh`.
   b. If you're using a proxy, set the proxy:

      For Windows:

      ```
      set HTTPS_PROXY=www-proxy.example.com:80
      ```

      For Linux:

      ```
      export HTTPS_PROXY=www-proxy.example.com:80
      ```

c. Launch the CLI:

For Windows:

```
esscs login -u MyAdmin -p mypass7YG -url https://192.0.2.1/essbase
```

For Linux:

```
esscs.sh login -u MyAdmin -p mypass7YG -url https://192.0.2.1/essbase
```

For more examples and details, see the login command topic.

If the CLI was installed correctly, a list of supported commands is displayed.

9. To execute multiple CLI commands, add them to any shell script and execute it.

In any script you run that contains CLI commands, Oracle recommends you include the following directive before the CLI login statement:
For Windows:

```
set ESSCLI_ID=%USERNAME%_%random%
```

For Linux:

```
export ESSCLI_ID=`whoami`_$PPID
```

This helps store session information and prevent execution errors when multiple scripts are run concurrently.

CLI Command Reference

The Essbase CLI commands that you issue in the **esscs** shell help you perform routine platform operations including: calc, dataload, dimbuild, lcmexport, lcmimport, upload and download of artifacts, start and stop an application or cube, and more.

The following commands are available in the command-line interface. Arguments to commands can be issued in any order.

- calc
- clear
- createlocalconnection
- dataload
- deletefile
- deploy
- dimbuild
- download
- help
- lcmexport
- lcmimport
- listapp

- listdb
- listfiles
- listfilters
- listlocks
- listvariables
- login, logout
- setpassword
- start
- stop
- unsetpassword
- upload
- version

To display help for all commands, enter `esscs -h`. To display help for a specific command, enter `esscs command -h`.

To turn on verbose output for any command, meaning that extended information (if available) is displayed, enter `esscs command -v command arguments`.

Login/Logout: CLI Authentication

The login CLI command for Essbase authenticates you to Essbase so you can use the CLI.

Before you can issue any other CLI commands to Essbase, you must log in. If a secure connection is required, then the URL must begin with `https`.

You can authenticate in the following ways using CLI:

- Use `setpassword` once to have the password stored for your client/user combination. In subsequent sessions, you can use the `login` command without being prompted to enter a password.
- Use the -user and -password options with the `login` command (Caution: the password appears in the shell window as cleartext).
- Use only the -user option with the `login` command. You are prompted to enter the password, which is hidden.

If you're a federated SSO user in Oracle Identity Cloud Service, logging in using MaxL or CLI is not supported. Federated SSO login requires a browser window. Create a native Identity Cloud Service user, and use that instead to log in using MaxL or CLI.

Syntax (login)

```
login [-verbose] -essbaseurl https://instance-name.example.com/essbase -user
username [-password password]
```

Option	Abbreviation	Description
-verbose	-v	Show extended descriptions
-essbaseurl	-url	Address of an instance of Essbase
-user	-u	User name

Option	Abbreviation	Description
-password	-p	Optional. Password for user. Alternatively, set the password using setpassword. If issuing the the login command from a script, and the password contains special characters, enclose it in double quotation marks (for example, "aNb3^5%9$!"). Use of $ (dollar sign) character within the Essbase password is not supported for logins in a Linux environment.

Example 1 (login)

```
esscs login -url https://myEssbase-test-myDomain.analytics.us2.example.com/
essbase -u smith
```

Example 2 (login)

In the following example, the user logging in, `admin1@example.com` is an Identity Cloud Service administrator who was set as the initial Essbase administrator during Essbase stack deployment on Oracle Cloud Infrastructure. As the password is not entered in this example, the administrator will be prompted to provide it next. The URL is the **essbase_url** from the job outputs resulting from the stack deployment.

```
esscs login -u admin1@example.com -url https://192.0.2.1/essbase
```

Syntax (logout)

```
logout
```

Example (logout)

```
esscs logout
```

Calc: Run a Calculation Script

The calc CLI command for Essbase executes a calculation script on the cube. To run this command, you need at least Database Update permission, as well as provisioned access to the calculation script.

Before you can run calculation scripts, you must first upload the scripts, as .csc files, to the cube directory. You can use the CLI to upload files. See Upload: Add Cube Files.

Syntax

```
calc [-verbose] -application appname -db cubename -script scriptfilename
```

Option	Abbreviation	Description
-verbose	-v	Show extended descriptions
-application	-a	Application name
-db	-d	Database (cube) name

Option	Abbreviation	Description
-script	-s	Calculation script name. Must have `.csc` file extension. You do not need to give a full path. Files are assumed to be in the relevant cube directory.

Example

```
esscs calc -v -a Sample -d Basic -s CALCALL.CSC
```

You can also run calculation scripts using the Calculate option in Cube Designer or Smart View, Jobs in the Essbase web interface or REST API, or **execute calculation** in MaxL.

Clear: Remove Data from a Cube

The clear CLI command for Essbase clears data from a cube. To use this command, you need at least Database Update permission.

Syntax

```
clear [-verbose] -application appname -db cubename [-option clearOption[-
regionspec regionSpec]]
```

Option	Abbreviation	Description
-verbose	-v	Optional. Show extended descriptions
-application	-a	Application name
-db	-d	Database (cube) name
-option	-O	Optional. Keyword specifying what to clear. Default option, if omitted, is ALL_DATA. The options for block storage cubes are: • `ALL_DATA`—All data, linked objects, and the outline are cleared • `UPPER_LEVEL`—Upper level blocks are cleared • `NON_INPUT`—Non input blocks are cleared The options for aggregate storage cubes are: • `ALL_DATA`—All data, linked objects, and the outline are cleared • `ALL_AGGREGATIONS`—All aggregated data is cleared • `PARTIAL_DATA`—Only specified data region is cleared. Use with -regionspec
-regionspec	-rs	MDX expression specifying the region to clear

Example

```
esscs clear -a ASOSamp -d Basic -O PARTIAL_DATA -rs "{([Jan],[Sale],[Cash])}"
```

You can also clear data using the Load Data option in Cube Designer, Jobs in the Essbase web interface or REST API, or **alter database *DBS-NAME* reset** in MaxL.

Createlocalconnection: Save a JDBC Connection

The createlocalconnection CLI command for Essbase creates a JDBC connection and stores it locally. To use this command, you need Service Administrator or power user role.

Description

A service administrator must use this command to create and save the local connection before anyone can use the CLI dataload or dimbuild commands with the streaming option. You must also set an environment variable EXTERNAL_CLASSPATH to point to the .jar file for your database driver (see Build Dimensions and Load Data by Streaming from a Remote Database).

Syntax

```
createLocalConnection [-verbose] -name streamConnection -connectionstring
connectionString -user userName [-driver jdbcDriver] [-password password]
```

Option	Abbreviation	Description
-verbose	-v	Show extended descriptions
-name	-N	Connection name

-connectionstring	-cs	JDBC connection string. Format can be with service name, as follows:
		
		`jdbc:oracle:thin:@host:port/service_name`
		
		or with SID, as follows:
		
		`jdbc:oracle:thin:@host:port:SID`
		
		The syntax formats above apply for Oracle Database. See Examples section for minor differences in the connection string syntax when you are working with other providers.

-user	-u	User name
-driver	-D	JDBC driver. If not provided, Oracle Database is considered the default, as `oracle.jdbc.driver.OracleDriver`
-password	-p	Password (optional)

If you have network connectivity between an external source of data and Essbase, it is most efficient to define application-level or global connections and Datasources in the Essbase web interface. These definitions help you to easily "pull" data from the external source. If you have no network connectivity between Essbase and the external source of data, then you can stream data loads or dimension builds using the CLI by first using this command to create a local connection, and then issuing the dataload or dimbuild command with the stream option.

Notes

After migrating to Release 21.4 or higher, the Service Administrator needs to recreate any saved local connections that were created using this command in a previous release.

Examples

Oracle DB - Service Name

If the `-driver` option and *jdbcDriver* parameter are not provided, Oracle database is the assumed database by default.

```
esscs createLocalConnection -N OracleDBConnection2 -cs
jdbc:oracle:thin:@host1.example.com:1521/ORCL.esscs.host1.oraclecloud.com -u
OracleUser
```

Oracle DB - SID

If the `-driver` option and *jdbcDriver* parameter are not provided, Oracle database is the assumed database by default.

```
esscs createLocalConnection -N OracleDBConnection1 -cs
jdbc:oracle:thin:@myhostname01:1521:ORCL -u OracleUser -D
oracle.jdbc.driver.OracleDriver
```

DB2

If the `-driver` option and *jdbcDriver* parameter are not provided, Oracle database is the assumed database by default.

```
esscs createLocalConnection -N DB2conn -cs jdbc:db2://
myhostname02.example.com:50000/TBC -u myDB2User -D com.ibm.db2.jcc.DB2Driver
```

MySQL

If the `-driver` option and *jdbcDriver* parameter are not provided, Oracle database is the assumed database by default.

```
esscs createLocalConnection -N MySQLconn -cs jdbc:mysql://
myhostname03.example.com:3306/tbc -u MySQLUsr -D com.mysql.jdbc.Driver
```

Microsoft SQL Server

If the `-driver` option and *jdbcDriver* parameter are not provided, Oracle database is the assumed database by default.

```
esscs createLocalConnection -N MSSQLConn -cs jdbc:sqlserver://
myhostname04.example.com:1433 -u MSSQLUsr -D
com.microsoft.sqlserver.jdbc.SQLServerDriver
```

Teradata

If the `-driver` option and *jdbcDriver* parameter are not provided, Oracle database is the assumed database by default.

```
esscs createLocalConnection -N TeraDconn -cs jdbc:teradata://
myhostname05.example.com/DBS_PORT=1025 -u TeraUsr -D
com.teradata.jdbc.TeraDriver
```

Dataload: Load Data to a Cube

The dataload CLI command for Essbase loads data to a cube. To use this command, you need at least Database Update permission.

This command requires one of the following sets of options:

- Data file and optional rule file
- Rule file with user name and password
- Stream option referencing a saved local connection

The source database should be accessible within the client network, as not all database drivers can work with Java proxies.

To load data, you must first upload the data load and rule files to the cube directory. You can use the CLI to upload files. See Upload: Add Cube Files.

Syntax

```
dataload [-verbose] -application appname -db cubename -file filename [| -
catalogfile catalogFile] [-rule rulesFile | -catalogrulefile
catalogRulesFile] [-user username [-password password]]  [-stream] [-
connection connectionName][-query queryString] [-rows n]]  [-abortOnError]
```

Option	Abbreviation	Description
-verbose	-v	Show extended descriptions
-application	-a	Application name
-db	-d	Database (cube) name
-file	-f	Data load file name. You do not need to give a full path. Files are assumed to be in the relevant database directory. You can use -catalogfile in place of this option.

Option	Abbreviation	Description
-rule	-r	Optional. Rule file name. You do not need to give a full path. Files are assumed to be in the relevant database directory. You can use -catalogrulefile in place of this option.
-catalogfile	-CF	Data load file name from the file catalog. You can use this option in place of `-file`.
-catalogrulefile	-CRF	Rule file name from the file catalog. You can use this option in place of `-rule`.
-user	-u	Optional. User name. Requires password if used. If you are using a saved connection and Datasource, no user name and password are required. If you are not using a saved connection, and the rule file connects to an RDBMS, specify the user name and password to connect to the RDBMS.
-password	-p	Optional. Password for user. If omitted, user will be prompted for password.
-stream	-S	Optional. Use streaming data load. Requires -conn option if used.
-connection	-conn	Required if streaming option is used. Name of a saved connection that was created using the createlocalconnection CLI command.
-query	-q	Optional. Database query to submit along with the streaming data load.
-rows	-rows	Optional. Number of rows to stream simultaneously. Default is 100.
-abortOnError	-abort	Abort data load if error is encountered

Examples

```
esscs dataload -a Sample -db Basic -f Calcdat.txt -abort true
```

```
esscs dataload -a Sample -db Basic -r Basic.rul -S -conn oraConn -q "Select *
from Data" -rows 50
```

```
esscs dataload -a Sample -db Basic -CF /users/weblogic/Data_Basic.txt -r
Data.rul -abortonerror
```

```
esscs dataload -a Sample -db Basic -CF /users/weblogic/Data_Basic.txt -CRF /
shared/Data.rul -abort
```

```
esscs dataload -a Sample -db Basic -CRF /shared/Data.rul -S -conn
localConnectionName -q "Select * from Table"
```

You can also load data using Cube Designer, Jobs in the Essbase web interface or REST API, or **import data** in MaxL.

Deletefile: Remove Cube Files

The deletefile CLI command for Essbase removes cube artifacts from the application, database, or user home directory. To delete files from a cube, you need at least Database

Manager permission for the cube. No special permissions are required to delete files from your user directory.

Syntax

```
deletefile [-verbose] -file fileName [-application application [-db
database] [| -catalogfile catalogFile]]
```

Option	Abbreviation	Description
-verbose	-v	Show extended descriptions
-file	-f	Name of the file to delete
-application	-a	Optional. Application name. If not provided, files are assumed to be in your user home directory.
-database	-db	Optional. Database (cube) name
-catalogfile	-CF	File path and name from the file catalog. You can use this option in place of `-file`.

Examples

```
esscs deletefile -a Sample -d Basic -f Act1.rul
```

```
esscs deletefile -CF /shared/Data.txt
```

You can also manage files in Cube Designer, the Essbase web interface, or REST API.

Deploy: Create a Cube from a Workbook

The deploy CLI command for Essbase creates a cube from an Excel application workbook. To run this command, you need at least Power User role.

Syntax

```
deploy [-verbose] -file fileName [-application application [-database
database] | -catalogfile catalogFile] [-restructureoption restructureOption]
[-loaddata] [-recreateapplication] [-createfiles] [-executescript]
```

Option	Abbreviation	Description
-verbose	-v	Show extended descriptions
-file	-f	Name of the application workbook file
-application	-a	Optional. Application name. If not provided, application name will be taken from the workbook.
-database	-db	Optional. Database (cube) name. If not provided, database name will be taken from the workbook.
-catalogfile	-CF	Application workbook from the file catalog. You can use this option in place of `-file`.
-loaddata	-l	Optional. Load data, if the application workbook contains a data worksheet. Otherwise, only metadata is imported into the cube.

Option	Abbreviation	Description
-restructureoption	-R	Optional. Keyword indicating the desired restructuring option. The options for block storage cubes are: • ALL_DATA—Preserve all data • NO_DATA—Preserve no data • LEAFLEVEL_DATA—Preserve level 0 (leaf level) data • INPUT_DATA—Preserve input data The options for aggregate storage cubes are: • ALL_DATA—Preserve all data • NO_DATA—Preserve no data
-recreateapplication	-ra	Optional. Re-create the application, if it already exists
-createfiles	-cf	Optional. Create cube artifacts in the files directory in Essbase.
-executescript	-e	Optional. Execute calculation scripts. Applicable only if the application workbook contains a calculation worksheet with **Execute Calc** set to Yes in the definitions.

Examples

```
esscs deploy -v -a SampleD1 -d BasicD1 -f Sample_Basic.xlsx -l -ra -cf -e
```

```
esscs deploy -CF "/gallery/Applications/Demo Samples/Block Storage/
Sample_Basic.xlsx" -a Sample1 -l -cf -e -R ALL_DATA
```

You can also deploy cubes using Cube Designer, or by using the Import option in the **Applications** section of the Essbase web interface.

Dimbuild: Load Dimensions to a Cube

The dimbuild CLI command for Essbase loads dimensions to a cube. To run this command, you need at least Database Manager permission for the cube.

Before you can load dimensions, you must first upload the dimension-build and rule files to Essbase. You can use the CLI to upload files. See Upload: Add Cube Files.

Syntax

```
dimbuild [-verbose] -application appname -db cubename -file fileName [| -
catalogfile catalogFile] -rule rulesFile [| -catalogrulefile
catalogRulesFile]] [-user userName [-password password]] [-stream] [-
connection connectionName][-query queryString] [-rows n]] [-restructureOption
restructureOption] [-forcedimbuild]
```

Option	Abbreviation	Description
-verbose	-v	Show extended descriptions
-application	-a	Application name
-db	-d	Database (cube) name

Option	Abbreviation	Description
-file	-f	Dimension build file name. You do not need to give a full path. Files are assumed to be in the relevant application or database directory. You can use -catalogfile in place of this option.
-rule	-r	Rule file name. You do not need to give a full path. Files are assumed to be in the relevant application or database directory. You can use -catalogrulefile in place of this option.
-catalogfile	-CF	Dimension build file name from the file catalog. You can use this option in place of -file.
-catalogrulefile	-CRF	Rule file name from the file catalog. You can use this option in place of -rule.
-user	-u	Optional. User name. Requires password if used. If you are using a saved connection and Datasource, no user name and password are required. If you are not using a saved connection, and the rule file connects to an RDBMS, specify the user name and password to connect to the RDBMS.
-password	-p	Optional. Password for user. If omitted, user will be prompted for password.
-stream	-S	Optional. Use streaming dimension build. Requires -conn option if used.
-connection	-conn	Required if streaming option is used. Name of a saved connection that was created using the createlocalconnection CLI command.
-query	-q	Optional. Database query to submit along with the streaming dimension build.
-rows	-rows	Optional. Number of rows to stream simultaneously. Default is 100.
-restructureOption	-R	Controls your preservation choices for the outline restructure. For block storage, possible options are: • ALL_DATA: Preserve all data when loading dimensions. • NO_DATA: Do not preserve data. • LEAFLEVEL_DATA: Preserve only level 0 data values. If all data required for calculation resides in level-0 members, then you should select this option. All upper-level blocks are deleted before the cube is restructured. When the cube is recalculated, the upper-level blocks are re-created. • INPUT_DATA: Preserve only input data. For aggregate storage, possible options are: • ALL_DATA: Preserve all data when loading dimensions. • NO_DATA: Do not preserve data.
-forcedimbuild	-F	Continue the dimension build even if other user activities are in progress. This cancels active user sessions.

Examples

```
esscs dimbuild -a Sample -d Basic -r Basic.rul -u smith -p password -R
NO_DATA -F
```

```
esscs dimbuild -a Sample -d Basic -r Basic.rul -S -conn oraConn -q "Select *
from Data" -rows 50 -R NO_DATA
```

```
esscs dimbuild -a Sample -db Basic -CRF /users/weblogic/Dim_Market.rul -CF /
shared/Market.txt -R ALL_DATA -F
```

You can also load dimensions using Cube Designer, Jobs in the Essbase web interface or REST API, or **import dimensions** in MaxL.

Download: Get Cube Files

The download CLI command for Essbase downloads cube artifacts from an instance of Essbase to a local directory.

You may need to download text files, rule files, or calculation script files from a cube, so you can work on them or upload them to another cube. To download cube artifacts, you need at least Database Update permission.

Syntax

```
download [-verbose] -file filename[ | -catalogfile catalogFile] [-application
appname [-db cubename]] [-localdirectory path] [-overwrite] [-nocompression]
```

Option	Abbreviation	Description
-verbose	-v	Show extended descriptions
-file	-f	Name of file to download
-application	-a	Optional. Application name. If not provided, artifacts are downloaded from your user home directory.
-db	-d	Optional. Database (cube) name
-catalogfile	-CF	File in the file catalog. You can use this option in place of `-file`.
-localdirectory	-ld	Optional. A local directory path
-overwrite	-o	Optional. Overwrite existing file
-nocompression	-nc	Optional. Disable compression of data transfer

Examples

```
esscs download -v -f Product003.rul -a Sample -d Basic -ld c:/temp -o
```

```
esscs download -f Acli.rul -ld c:/temp -o
```

```
esscs download -CF /shared/Acli.rul -ld c:/temp -o
```

You can also manage files in Cube Designer, the Essbase web interface, or REST API.

Help: Display Command Syntax

The help CLI command for Essbase displays command-level help in the console or terminal.

Syntax

```
[command] -help | -h
```

Examples

```
esscs -help
```

```
esscs -h
```

```
esscs dataload -help
```

LcmExport: Back Up Cube Files

The lcmexport CLI command for Essbase backs up applications and cube artifacts to a Lifecycle Management (LCM) `.zip` file, which it downloads to your local machine. To run this command, you need at least Application Manager permission.

Syntax

```
lcmExport [-verbose] -application appname|-allApp -zipfilename filename [-
localDirectory path][-threads threadscount][-skipdata][-overwrite][-
generateartifactlist][-include-server-level][-cube][-exportdata][-filetype][-
exportpartitions][-exportfilters][-restEncryPassword]
```

Option	Abbreviation	Description
-verbose	-v	Optional. Show extended descriptions.
-application	-a	Name of application to back up.
-allApp	-aa	Optional (and case-sensitive). If used instead of -application, exports all applications to a single zip file. lcmimport can accept single-application zip files or multiple-application zip files.
-zipfilename	-z	Optional. Name of compressed file to hold backup files.
-localdirectory	-ld	Optional. A local directory path. If not specified, the zip is saved in `<Application Directory>/catalog/users/<user_name>` on the Essbase server.
-threads	-T	Optional. Number of threads to spawn if using parallel export. Minimum: 10
-skipdata	-skip	Optional. Do not include data in the backup.
-overwrite	-o	Optional. Overwrite existing backup file.

Option	Abbreviation	Description
-generateartifactlist	-gal	Optional. Generate a text file containing a complete list of the exported artifacts. You can use this text file to manage the import of artifacts. For example, you can rearrange the order of artifacts in the list to control the order in which they are imported. You can skip importing some artifacts by removing or commenting out items in the list.
-include-server-level	-isl	Optional. Include globally defined connections and Datasources.
-cube	-c	Optional. Export a single cube. This option can be specified along with the options to export only: data, files of certain types, partitions, or filters.
-exportdata	-d	Optional. Only export data.

-filetype	-ft	Optional. Only export files of the specified type. Supported file types include OTL (outline), TXT (text), RUL (rule), CSC (calc script), DTR (drill through report definition), and Excel (only .xls files are exported. No .xlsx files are exported).
		Examples:
		`esscs lcmexport -a sample -z sampleXLSOnly.zip -v -ft excel`
		`esscs lcmexport -a sample -z sampleTXTOnly.zip -v -ft txt`

-exportpartitions	-ep	Optional. Only export partition definitions. Lifecycle Management (LCM) import operations (and Migration Utility import) are not supported for migration of federated partitions. Federated partitions must be recreated manually on the target.
-exportfilters	-ef	Optional. Only export security filters.
-restEncryPassword	-encryPwd	If the application is encrypted, a password to protect the encrypted application during migration. The password must be between 6-15 characters, and should not contain any of the following special characters: `?=.,*!@#&()[{}]:;'/~$^+<>-` **Caution**: If this password is forgotten, there is no way to retrieve it, and the application cannot be imported.

Notes

This command, like other CLI commands, can be used from outside the Essbase machine, whereas the LCM utility must be run on the Essbase machine.

Example

```
esscs lcmExport -v -a Sample -z Sample.zip -ld c:/temp -skip -o -gal -isl
```

Windows Script Example

The following Windows script, `lcmexportall.bat`, exports all applications to the current local directory from which CLI was called.

```
set ESSCLI_ID=%USERNAME%_%random%
@echo on
echo Login to Essbase
call esscs login -u myusername -p mYpa55w0rD -url https://
myserver.example.com:9000/essbase
echo Export all apps and download to this directory
call esscs lcmexport -aa -z allapps.zip
echo Log out of Essbase
call esscs logout
@echo off
```

LcmImport: Restore Cube Files

The lcmimport CLI command for Essbase restores cube artifacts from a Lifecycle Management (LCM) `.zip` file. To run this command, you must be the power user who created the application, or a service administrator.

Syntax

`lcmImport [-verbose] -zipfilename` *`filename`* `[-overwrite] [-targetappName` *`targetApplicationName`*`][-include-server-level][-artifactlist` *`artifactList`*`][-restEncryPassword]`

Option	Abbreviation	Description
-verbose	-v	Optional. Show extended descriptions
-zipfilename	-z	Name of compressed file containing backup files
-overwrite	-o	Optional. Recreate the target application.
-targetappName	-ta	Optional. Target application name, if you want it to be different from the source name.

Option	Abbreviation	Description

-artifactlist	-al	Optional. Name of the file containing the list of artifacts to import. This file can be generated from lcmexport.
		To skip artifacts, comment out or delete entries from the list. For example, to skip importing audit records, comment out that line, as shown:
		
		`# ------------IMPORT-----------------`
		`import @Provisions`
		`import @Databases/Basic`
		`#import @Databases/Basic/Audit`
		`import @Databases/Basic/Text_files`
		`import @Databases/Basic/Xml_files`
		`import @Databases/Basic/Calc_scripts`
		`import @Databases/Basic/Open_XML_Excel_files`
		`import @Databases/Basic/ScenarioManagement`
		`import @Databases/Basic/Provisions`
		`import @Databases/Basic/Rule_files`
		
		To control import order, rearrange the `import` entries in the text file.
		If –overwrite is used, the import operation deletes and recreates the entire application, importing only the artifacts present in the list. If –overwrite is not used, the import operation includes the artifacts specified in the list, without impacting any other artifacts already present in the target application.

-include-server-level	-isl	Optional. Include globally defined connections and Datasources.
-restEncryPassword	-encryPwd	If the application is encrypted, a password to protect the encrypted application during migration. The password must be between 6-15 characters, and should not contain any of the following special characters: `?=.,*!@#&()[{}]:;'/~$^+<>-` **Caution**: If this password is forgotten, there is no way to retrieve it, and the application cannot be imported.

Notes

- This command, like other CLI commands, can be used from outside the Essbase machine, whereas the LCM utility must be run within the Essbase machine.
- After the LCM import completes, you may need to take further action to restore migrated connections to external sources. To do this, open the connection and enter the password.
- When partitions exist between cubes being migrated, you must import the data source before the data target. Otherwise, partition definitions may not be restored.

  Lifecycle Management (LCM) import operations (and Migration Utility import) are not supported for migration of federated partitions. Federated partitions must be recreated manually on the target.
- LCM Import does not migrate location alias credentials. You must replace your location alias credentials, either by recreating location aliases using MaxL, or by editing the location alias credentials in the XML exported by LCM Export.

Example

```
esscs lcmImport -z C:/Sample/Sample.zip -o -al C:/Sample/Sample.txt
```

Listapp: Display Applications

The listapp CLI command lists applications that you have access to on this instance of Essbase.

Syntax

```
listapp [-verbose] [-details]
```

Option	Abbreviation	Description
-verbose	-v	Optional. Show extended descriptions
-details	-dtl	Optional. Display more details in the output (application type and current status).

Example

```
esscs listapp -v -dtl
```

Listdb: Display Cubes

The listdb CLI command lists databases that you have access to within a specified Essbase application.

Syntax

```
listdb [-verbose] -application applicationName [details]
```

Option	Abbreviation	Description
-verbose	-v	Optional. Show extended descriptions
-application	-a	Application name
-details	-dtl	Optional. Display status details in the output

Example

```
esscs listdb -v -a Sample -dtl
```

Listfiles: Display Files

The listfiles CLI command lists cube artifacts that exist on an instance of Essbase.

Cube artifacts may include data files, workbooks, rule files, calculation script files, or other artifacts. Cube artifacts include any files that are needed to perform actions on applications and cubes.

To list files for a cube, you need at least Database Access permission for the application. No special permissions are required to list files from your user directory.

Syntax

```
listfiles [-verbose] [-type filetype] [-application appname [-db cubename] | -catalogpath catalogPath]
```

Option	Abbreviation	Description
-verbose	-v	Optional. Show extended descriptions
-type	-t	Optional. File extension/type to display, not including the period. Supported file types are: • `.csc` (calculation scripts) • `.rul` (rule files) • `.txt` (text files) • `.msh` (MaxL scripts) • `.xls`, `.xlsx` (Excel workbooks) • `.xlsm` (macro-enabled Excel workbooks) • `.xml` (XML files) • `.zip` (compressed zip files) • `.csv` (comma-separated files)
-application	-a	Optional. Application name. If not provided, files from your user home directory are displayed.
-db	-d	Optional. Database (cube) name
-catalogpath	-CP	Optional. Catalog path to the filename. Can be used instead of `-a [-d]` to specify the catalog location of the file(s).

Examples

```
esscs listfiles -t rul -a Sample -d Basic
```

```
esscs listfiles -CP "/shared"
```

You can also manage files in Cube Designer, the Essbase web interface, or REST API.

Listfilters: View Security Filters

The listfilters CLI command displays a list of Essbase security filters. You need at least Database Manager permission on the application to see filters for any cubes in the application.

Syntax

```
listfilters [-verbose] -application appname -db cubename
```

Option	Abbreviation	Description
-verbose	-v	Optional. Show extended descriptions
-application	-a	Application name
-db	-d	Database (cube) name

Example

```
esscs listfilters -v -a Sample -d Basic
```

Listlocks: View Locks

The listlocks CLI command for Essbase displays any locked data blocks or cube-related objects. To run this command, you need at least Database Access permission on the application.

Syntax

```
listlocks [-verbose] -application appname -db cubename [-object]
```

Option	Abbreviation	Description
-verbose	-v	Optional. Show extended descriptions
-application	-a	Application name
-db	-d	Database (cube) name
-object	-obj	Optional. Display locked files/artifacts.

Example

```
esscs listlocks -v -a Sample -d Basic -obj
```

Listvariables: Display Substitution Variables

The listvariables CLI command for Essbase lists substitution variables defined at the cube, application, or global scope. You need at least Database Access permission to see variables for a cube, Application Manager role to see variables for an application, and Service Administrator role to see global variables.

Syntax

```
listvariables [-verbose] [-application application [-db database]]
```

Option	Abbreviation	Description
-verbose	-v	Show extended descriptions.
-application	-a	Optional. Application name.
-database	-db	Optional. Database (cube) name.

Examples

Cube level

```
esscs listvariables -a Sample -db Basic
```

Application level

```
esscs listvariables -a Sample
```

Global level

```
esscs listvariables
```

Setpassword: Store CLI Credentials

The setpassword CLI command for Essbase stores a password associated with your client/user combination. In subsequent sessions, you can log in without entering a password.

Syntax

```
setpassword [-verbose] -essbaseurl URL -user userName
```

Option	Abbreviation	Description
-verbose	-v	Optional. Show extended descriptions
-essbaseurl	-url	Address of an instance of Essbase
-user	-u	Your user name

Notes

After migrating to Release 21.4 or higher, you must reset any stored passwords that were saved using this command in a previous release.

Example

```
esscs setpassword -url https://myEssbase-test-
myDomain.analytics.us2.example.com/essbase -user rschmidt
```

Start: Start an Application or Cube

The start CLI command starts an Essbase application or cube, loading it into memory. To run this command, you need at least Database Access permission on the application.

Syntax

```
start [-verbose] -application appname [-db cubename]
```

Option	Abbreviation	Description
-verbose	-v	Optional. Show extended descriptions
-application	-a	Application name
-db	-d	Optional. Database (cube) name

Example

```
esscs start -v -a Sample -d Basic
```

Stop: Stop an Application or Cube

The stop CLI command stops an Essbase application or cube. To run this command, you need at least Database Access permission on the application.

Syntax

```
stop [-verbose] -application appname [-db cubename]
```

Option	Abbreviation	Description
-verbose	-v	Optional. Show extended descriptions
-application	-a	Application name
-db	-d	Optional. Database (cube) name

Example

```
esscs stop -v -a Sample -d Basic
```

Unsetpassword: Remove Stored CLI Credentials

The unsetpassword CLI command for Essbase removes stored login credentials associated with your client/user combination, reversing the effect of setpassword.

Syntax

```
unsetpassword [-verbose] -essbaseurl URL -user userName
```

Option	Abbreviation	Description
-verbose	-v	Show extended descriptions
-essbaseurl	-url	Address of an instance of Essbase
-user	-u	The user whose password to unset

Example

```
esscs unsetpassword -url https://myEssbase-test-
myDomain.analytics.us2.example.com/essbase -u user1
```

Upload: Add Cube Files

The upload CLI command uploads cube artifacts from a local directory to an instance of Essbase.

To perform tasks such as data loads, dimension builds, calculations, or other operations, you may need to upload data files, rule files, calculation script files, or other artifacts to the cube directory. You can also upload the artifacts to your user directory.

To upload files to a cube, you need at least Database Manager permission. No special permissions are required to upload to your user directory.

> **Note:**
>
> You can enable antivirus scanning in the Essbase web interface so that files are scanned for viruses before they are uploaded to the server.

Syntax

```
upload [-verbose] -file filename [-application appname [-db cubename] | -
catalogpath catalogPath] [-overwrite] [-nocompression][-compressionalgorithm]
```

Option	Abbreviation	Description
-verbose	-v	Optional. Show extended descriptions
-file	-f	Name of file to upload **Note:** File extensions must be lower case. For example, *filename*`.txt`.
-application	-a	Optional. Application name. If not provided, files are uploaded to your user directory, or to the catalog path specified in `-CP`.
-db	-d	Optional. Database (cube) name. Requires `-a`.
-catalogpath	-CP	Optional. Catalog path to the filename. Can be used instead of `-a [-d]` to specify the catalog location of the file.
-overwrite	-o	Optional. Overwrite existing file
-nocompression	-nc	Optional. Disable compression of data transfer

-compressionalgorithm	-ca	Optional. Available if `-nc` is not used. Defines which compression algorithm to use for data transfer. Possible choices: **gzip** or **lz4**.
		• gzip—Default if compression is used. Provides smaller data transfer with slower calculation.
		• lz4—Provides faster calculation with a slower data transfer.
		Usage examples:
		`-ca gzip`
		`-ca lz4`

Examples

```
esscs upload -v -f c:/temp/Maxl01.msh -a Sample -d Basic -o -ca lz4
```

```
esscs upload -f C:/temp/Act1.rul -CP /shared
```

You can also manage files in Cube Designer, the Essbase web interface, or REST API.

Version: Display API Version

The version CLI command gets the version of the REST API that is associated with this instance of Essbase.

Syntax

```
version
```

Example

```
esscs version
```

3
MaxL

Using MaxL, you can administer and query Essbase through a scripting language.

MaxL is the multi-dimensional database access language for Essbase. MaxL is a practical, expressive interface for administering and querying the Essbase system. With the MaxL language, you use statements to make requests. MaxL statements begin with a verb, such as Create, Alter, and Display.

Manage Essbase Using the MaxL Client

To communicate with Essbase using MaxL scripts or statements, use the MaxL Client to issue the statements over HTTP or HTTPS.

If you want to run MaxL statements on the Essbase Server rather than from a client, connect to the server and run the MaxL startup script, startMAXL.sh or startMAXL.bat. The script is located in `<Domain Root>/<Domain Name>/esstools/bin`. If you do not know where that is in your Essbase Server, refer to Environment Locations in the Essbase Platform.

Prerequisites to Set Up the MaxL Client

Before you can use the MaxL Client, you will need the Essbase URL, and you may need to set up the TLS (SSL) certificate.

To run MaxL scripts or statements, you must be a power user or administrator. To prepare for using the MaxL Client,

1. Get the URL for the Essbase instance from your Service Administrator. Its basic format is:

   ```
   https://IP-address:port/essbase
   ```

2. Using a web browser or cURL, test that you can reach the discovery URL from the client host. A discovery URL is the URL provided by your Service Administrator, with `/agent`

appended to the end. Here is a cURL example (for secure/TLS mode in an independent Essbase deployment):

```
curl https://192.0.2.1:9001/essbase/agent --tlsv1.2
```

Here is an example for a stack deployment of Essbase on OCI:

```
curl https://192.0.2.1:443/essbase/agent --tlsv1.2
```

If you have connectivity, you should see a response:

```
<html>
<head><title>Oracle&#x00ae; Essbase</title></head>
<body>
<H2>Oracle&#x00ae; Essbase</H2>
</body></html>
```

3. Set up the SSL certificate, if applicable to your organization.
   - If you're using one of these deployment types, a Trusted CA Signed SSL Certificate is included:
     - Oracle Analytics Cloud
     - Oracle Analytics Cloud with Identity Cloud Service (IDCS) and Load Balancing
     - Cloud at Customer with Load Balancing
   - If you're using Oracle Analytics Cloud or Cloud at Customer with LDAP (without Load Balancing), use a self-signed certificate.
   - To check if a certificate is trusted, paste the discovery URL into a web browser. If **https** is green or a label says "Secure," it is trusted. If **https** is red or a label says "Not secure," it is untrusted.
   - If you're using the MaxL Client in Essbase 21c with a self-signed certificate, you will have two options (do this after you download the client):
     a. Disable peer verification by setting the environment variable API_DISABLE_PEER_VERIFICATION=1

        Linux example

        Edit `startMAXL.sh`, adding the following line:

        ```
        export API_DISABLE_PEER_VERIFICATION=1
        ```

        Windows example

        Edit `startMAXL.bat`, adding the following line:

        ```
        set API_DISABLE_PEER_VERIFICATION=1
        ```

     b. Import the self-signed certificate to the client trust store (cacert.pem) and set the environment variable API_CAINFO=CA *<certificate file path>*. The client verifies the server's digital certificate using a provided ca-bundle certificate store. Provide the ca-bundle location by specifying the environment variable API_CAINFO=CA *<certificate file path>*

        Linux example

Edit `startMAXL.sh`, adding the following line:

```
export API_CAINFO=/u01/cacert.pem
```

Windows example

Edit `startMAXL.bat`, adding the following line:

```
set API_CAINFO=c:/cacert.pem
```

If you don't provide *certificate file path*, the Essbase Runtime Client will try to get ca-bundle from the default OpenSSL installation location (applicable for Linux and Macintosh).

A `cacert.pem` is available in the MaxL Client download zip. Another sample source is: https://curl.haxx.se/docs/caextract.html.

Download and Use the MaxL Client

To run the MaxL Client for use with Essbase, download the latest version from the Console, set the proxy if needed, run the startup script, and log in.

The Essbase MaxL Client enables you to use MaxL over HTTP or HTTPS. MaxL is an administrative, language-based interface for managing cubes and artifacts. Be sure you are using the latest client version provided in the Console, as older, previously downloaded versions may not work correctly.

To run MaxL statements, you must be a power user or an administrator. Before you download the MaxL Client, see Prerequisites to Set Up the MaxL Client.

If you're a federated SSO user in Oracle Identity Cloud Service, logging in using MaxL or CLI is not supported. Federated SSO login requires a browser window. Create a native Identity Cloud Service user, and use that instead to log in using MaxL or CLI.

1. In the Essbase web interface, click **Console**.
2. In the Console, go to **MaxL Clients**.
3. Click **Download**
   
   next to the MaxL Client that is appropriate for your platform.
4. Save the compressed `EssbaseMaxl` file to your local drive.
5. Extract the contents of the compressed file to a folder.
6. If you're using a proxy, you must set the correct proxy in the MaxL execution script, `startMAXL.bat` or `startMAXL.sh`. The following example, applicable for editing `startMAXL.sh` for UNIX, tells MaxL to use the designated proxy (proxy.example.com), but to bypass using a proxy for the specific destinations listed in the exception list (127.0.0.1, localhost, and something.example.com).

   ```
   export https_proxy=http://proxy.example.com
   export no_proxy=127.0.0.1,localhost,something.example.com
   ```

For Windows, `startMAXL.bat` can be edited similarly but with different syntax.

```
set proxy proxy-server="https://proxy.example.com" bypass-
list="127.0.0.1;localhost;*.example.com"
```

7. If you're using Essbase deployed on Oracle Cloud Infrastructure and are using a self signed certificate, you must disable peer verification in the MaxL execution script. **Caution**: this solution should be only temporary, until you can obtain a trusted CA certificate. Here is an example using **bash** (for `startMAXL.sh`):

   ```
   export API_DISABLE_PEER_VERIFICATION=1
   ```

8. Run the `startMAXL` batch or shell script. A command prompt opens, the environment setup completes, and the MaxL Client starts up.
9. Log in by providing your credentials and the Essbase URL in the MaxL **login** statement.

   In the following example, the user logging in, User5, is from a federated MSAD directory and logging in to Essbase On-Premise.

   ```
   login user User5 P855w0r$4 on "https://192.0.2.1:9001/essbase/agent";
   ```

   > **Tip:**
   >
   > See MaxL Troubleshooting for On-Premise installations.

   In the following example, the user logging in, `admin1@example.com` is an Identity Cloud Service administrator who was set as the initial Essbase administrator during Essbase stack deployment on Oracle Cloud Infrastructure. As the password is not entered in this example, the administrator will be prompted to provide it next. The URL is the **essbase_url** from the job outputs resulting from the stack deployment.

   ```
   login admin1@example.com on "https://192.0.2.1/essbase";
   ```

   Any Identity Cloud Service user provisioned to work with Essbase can log in to MaxL, as long as they are provisioned as a power user or administrator.
10. Execute an interactive MaxL statement.

    For example:

    ```
    display database all;
    ```

To learn more about MaxL, see MaxL Statement Reference.

How to Read MaxL Railroad Diagrams

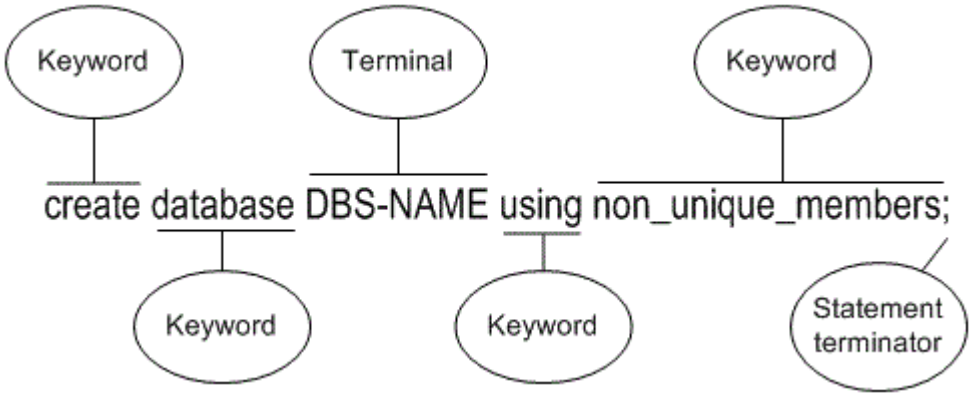
The MaxL grammar for Essbase is illustrated using a railroad syntax notation. The railroad diagrams illustrate all the valid (grammatically correct) statements that can be parsed by MaxL.

- Anatomy of MaxL Statements
- Railroad Diagram Symbols
- Sample Railroad Diagram

Anatomy of MaxL Statements

MaxL statements for Essbase are syntactically comprised of keywords and terminals. Understanding how they work together can help you build your MaxL script-writing skills.

- A keyword, represented in plain, lower-case font, is a unit of MaxL grammar. Keywords must be entered literally and in the correct order in MaxL statements. See the examples of keywords in the following diagram excerpt:



- A terminal, represented in upper-case without brackets, is replaced by values in the appropriate format as defined in the Terminals table. In the above diagram, DBS-NAME is a terminal. Terminals need to be replaced with a valid name; for example, `sample.basic`.

  Keywords cannot be used as terminals, unless enclosed in single quotation marks. For example, to create a database named database, the statement `create database database;` would return an error, but `create database "database";` would work.
- The semicolon indicates the end of a statement. Omitting a semicolon, or placing one before the expected end of a statement, results in a syntax error.
- A non-terminal, represented in upper-case with angle brackets <>, is defined in an additional diagram, usually below the main diagram. No non-terminal is shown here.

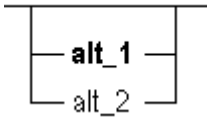
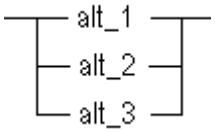
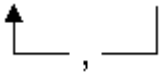
Railroad Diagram Symbols

The following table describes the meaning of symbols used in railroad diagrams.

Table 3-1 Railroad Diagram Symbols

Symbol	Definition
	Statement begins here.
	Statement continues on next line.
	Statement is continued from previous line.
	Statement ends here.

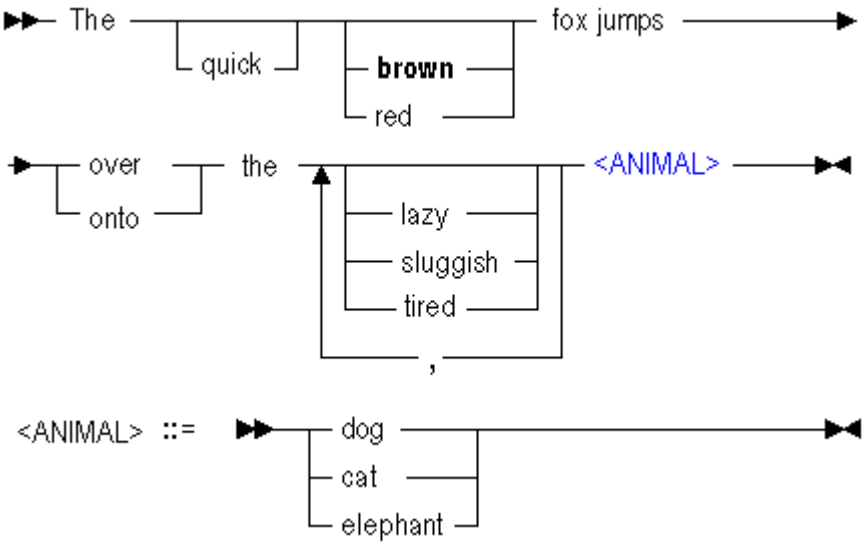
Table 3-1 (Cont.) Railroad Diagram Symbols

Symbol	Definition
	Alternatives: optionally select one keyword. Boldface indicates default if no selection is made.
	Alternatives: selection of one keyword is required.
	A comma-separated list of any length is permitted.
TERMINAL-NAME	Word is not further defined. Replace with value of format shown in the Terminals table.
<NON-TERMINAL>	Word used in statement is further defined.
<NON-TERMINAL> ::=	Non-terminal used in statements is defined here.

Sample Railroad Diagram

The following diagram illustrates a variant grammar that parses the following English sentence:

"The quick brown fox jumps over the lazy dog."



Keywords and variables on the main line (with arrow markings) are required; optional grammar is recessed (lower than the main line). A vertical stack of words represents alternatives. Bold words indicate defaults when no word is chosen.

Valid sentences parse-able by the example grammar may include:

- The fox jumps over the dog. Bold letters indicate a default value when no option is entered; therefore, entry of this statement would be interpreted as *The brown fox jumps over the dog*.
- The quick brown fox jumps over the dog.
- The red fox jumps over the lazy cat.
- The quick brown fox jumps onto the tired elephant.

MaxL Statements

MaxL is a data-definition language for Essbase that has an expressive grammar you use to write statements. Statements help you perform administrative actions in Essbase.

In Essbase documentation, the syntax for MaxL DDL is illustrated using railroad diagrams.

MaxL grammar is case-insensitive. Semicolon statement-terminators are required when using the MaxL Shell.

Keywords of the MaxL grammar are represented in this document in lower-case. Terminals, represented in upper-case, are to be replaced by the appropriate names, numbers, privileges, or strings. For more information about components of MaxL statements, see MaxL Definitions.

Topics covered in this section:

- Listed By Verbs
- Listed by Objects
- MaxL Statement Reference
- Performance Statistics in MaxL

Listed By Verbs

MaxL data-definition language for Essbase has statements beginning with the following verbs.

alter

create

display

drop

execute

export

grant

import

login

logout (see MaxL Shell Commands)

query

refresh

Alter

MaxL data-definition language for Essbase has the following statements that begin with the verb alter.

application

database

drillthrough

filter

group

object

partition

session

system

tablespace

trigger

user

Create

MaxL data-definition language for Essbase has the following statements that begin with the verb create.

application

calculation

database

drillthrough

filter

function

group (EPM Shared Services mode only)

location alias

macro

outline

partition

trigger

user (EPM Shared Services mode only)

Display

MaxL data-definition language for Essbase has the following statements that begin with the verb display.

application

calculation

database

drillthrough

filter

filter row

function

location alias

lock

macro

object

partition

privilege

session

system

tablespace

trigger

trigger spool

variable

Drop

MaxL data-definition language for Essbase has the following statements that begin with the verb drop.

application

calculation

database

drillthrough

filter

function

group

location alias

lock

macro

object

partition

trigger

trigger spool

user

Execute

MaxL data-definition language for Essbase has the following statements that begin with the verb execute.

aggregate process (aggregate storage)

aggregate selection (aggregate storage)

aggregate build (aggregate storage)

allocation (aggregate storage)

calculation

custom calculation (aggregate storage)

Export

MaxL data-definition language for Essbase has the following statements that begin with the verb export.

data

LRO

outline

query_tracking (aggregate storage)

Grant

MaxL data-definition language for Essbase has a grant statement. Click the link for syntax details and uses.

Grant

Import

MaxL data-definition language for Essbase has the following statements that begin with the verb import.

data

dimensions

lro

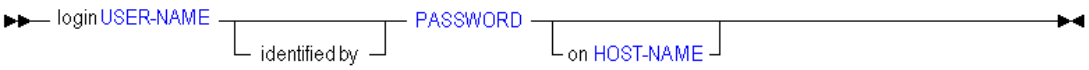
query_tracking (aggregate storage)

Login

Before you can send MaxL statements from the MaxL Shell to Essbase, you must log in to an Essbase Server session.

As a prerequisite to using MaxL, follow the client setup instructions in Manage Essbase Using the MaxL Client.

> **Note:**
>
> Before logging in to an Essbase Server session, you must start the MaxL Shell (see MaxL Invocation Summary, in MaxL Shell Commands). Or, you can start the MaxL Shell and log in at the same time (see `-l Flag: Login` at the same link).



- USER-NAME
- PASSWORD
- HOST-NAME

Example

For an independent deployment:

```
login admin pa5sw0rd on "https://myserver.example.com:9001/essbase/agent";
```

For a stack deployment on OCI:

```
login admin pa5sw0rd on "https://192.0.2.1:443/essbase/agent";
```

> **Note:**
>
> The Essbase system administrator logging in must have Identity Domain Administrator and Security Administrator role in the confidential identity application.

Query

MaxL data-definition language for Essbase has the following statements that begin with the verb query.

archive_file

database

application (for aggregate storage)

application (for block storage)

Refresh

MaxL data-definition language for Essbase has the following statements that begin with the verb refresh.

custom definitions

outline

replicated partition

Listed by Objects

MaxL data-definition language for Essbase has statements that operate on the following objects.

aggregate_build (aggregate storage)

aggregate_process (aggregate storage)

aggregate_selection (aggregate storage)

allocation (aggregate storage)

application

archive_file

calculation

data

database

dimensions

drillthrough

filter

function

group

location alias

lock

lro

macro

object

outline

partition

privilege

query_tracking (aggregate storage)

session

system

tablespace (aggregate storage)

trigger

trigger spool

user

variable

Aggregate Build

MaxL data-definition language for Essbase has one statement that operates on the aggregate build object. Click the link for syntax details and uses.

execute aggregate build

Aggregate Process

MaxL data-definition language for Essbase has one statement that operates on the aggregate process object. Click the link for syntax details and uses.

execute aggregate process

Aggregate Selection

MaxL data-definition language for Essbase has one statement that operates on the aggregate selection object. Click the link for syntax details and uses.

execute aggregate selection

Allocation

MaxL data-definition language for Essbase has one statement that operates on the allocation object. Click the link for syntax details and uses.

execute allocation

Application

MaxL data-definition language for Essbase has the following statements that operate on the application object. Click a link for syntax details and uses.

alter

create

display

drop

query (for aggregate storage only)

Archive_file

MaxL data-definition language for Essbase has one statement that operates on the archive_file object. Click the link for syntax details and uses.

query

Calculation

MaxL data-definition language for Essbase has the following statements that operate on the calculation object. Click a link for syntax details and uses.

create

display

drop

execute

execute custom (aggregate storage)

Custom Definitions

MaxL data-definition language for Essbase has the following statements that operate on the custom definition object. Click a link for syntax details and uses.

create function

create macro

display function

display macro

drop function

drop macro

refresh custom definitions

Data

MaxL data-definition language for Essbase has the following statements that operate on the data object. Click a link for syntax details and uses.

export

import

Database

MaxL data-definition language for Essbase has the following statements that operate on the database object. Click a link for syntax details and uses.

alter

create

display

drop

query

Dimensions

MaxL data-definition language for Essbase has one statement that operates on the dimensions object. Click the link for syntax details and uses.

import

Drillthrough

MaxL data-definition language for Essbase has the following statements that operate on the drillthrough object. Click a link for syntax details and uses.

alter

create

display

drop

Filter

MaxL data-definition language for Essbase has the following statements that operate on the filter object. Click a link for syntax details and uses.

alter filter

create filter

display filter

display filter row

drop filter

Function

MaxL data-definition language for Essbase has the following statements that operate on the function object. Click a link for syntax details and uses.

create

display

drop

refresh

Group

MaxL data-definition language for Essbase has one statement that operates on the group object. Click the link for syntax details and uses.

alter

create

drop

Location Alias

MaxL data-definition language for Essbase has the following statements that operate on the location alias object. Click a link for syntax details and uses.

create

display

drop

Lock

MaxL data-definition language for Essbase has the following statements that operate on the lock object. Click a link for syntax details and uses.

display

drop

LRO

MaxL data-definition language for Essbase has the following statements that operate on the lro object. Click a link for syntax details and uses.

export

import

Macro

MaxL data-definition language for Essbase has the following statements that operate on the macro object. Click a link for syntax details and uses.

create

display

drop

refresh

Object

MaxL data-definition language for Essbase has the following statements that operate on the object object. Click a link for syntax details and uses.

alter

display

drop

Outline

MaxL data-definition language for Essbase has the following statements that operate on the outline object. Click a link for syntax details and uses.

create

refresh

see also Dimensions

Partition

MaxL data-definition language for Essbase has the following statements that operate on the partition object. Click a link for syntax details and uses.

alter

create

display

drop

refresh replicated

refresh outline for outline synchronization

Privilege

MaxL data-definition language for Essbase has the following statements that operate on the privilege object. Click a link for syntax details and uses.

display

grant

Query_tracking

MaxL data-definition language for Essbase has the following statements that operate on the query_tracking object. Click a link for syntax details and uses.

export (aggregate storage)

import (aggregate storage)

Session

MaxL data-definition language for Essbase has the following statements that operate on the session object. Click a link for syntax details and uses.

alter

display

alter system to stop a session

System

MaxL data-definition language for Essbase has the following statements that operate on the system object. Click a link for syntax details and uses.

alter

display

Tablespace

MaxL data-definition language for Essbase has the following statements that operate on the tablespace object. Click a link for syntax details and uses.

alter

display

Trigger

MaxL data-definition language for Essbase has the following statements that operate on the trigger object. Click a link for syntax details and uses.

alter

create or replace

display

drop

Trigger Spool

MaxL data-definition language for Essbase has the following statements that operate on the trigger spool object. Click a link for syntax details and uses.

display

drop

User

MaxL data-definition language for Essbase has the following statements that operate on the user object. Click a link for syntax details and uses.

alter to revoke filters

create to add to Essbase external users that exist in EPM Shared Services

drop to clean up remnant accounts from Essbase

grant to assign permissions

Variable

MaxL data-definition language for Essbase has the following statements that operate on the variable object. Click a link for syntax details and uses.

display variable

To add, drop, or set substitution variables:

alter application

alter database

alter system

MaxL Statement Reference

MaxL statements available for Essbase are different depending on whether you are administering an aggregate storage cube or a block storage cube (including hybrid mode).

Ways to navigate MaxL documentation include:

- Listed By Verbs
- Listed by Objects
- Aggregate Storage List

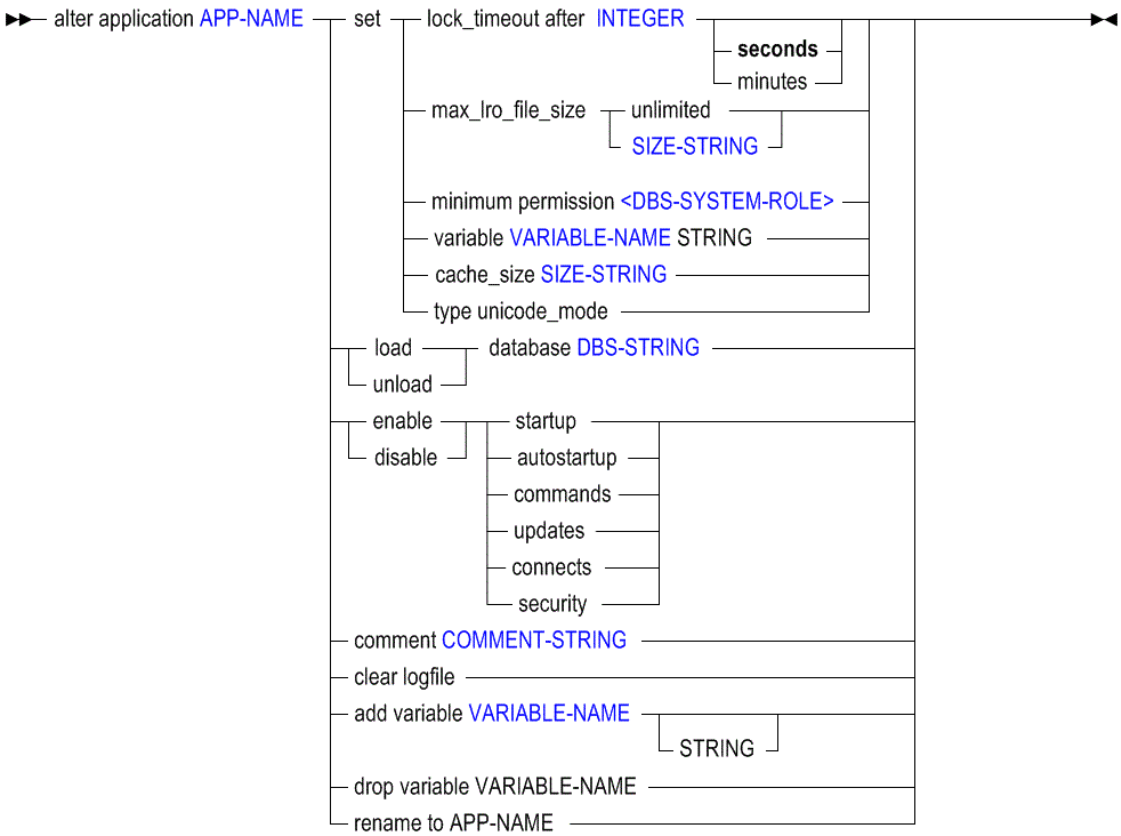
Alter Application

The MaxL alter application statement helps you change Essbase application-wide settings.

Click here for aggregate storage version

Permission required: Application Manager.

Syntax



- APP-NAME
- INTEGER
- SIZE-STRING
- DBS-SYSTEM-ROLE
- VARIABLE-NAME
- DBS-STRING
- COMMENT-STRING

Use **alter application** to change the following application-wide settings:

Keywords

set lock_timeout
Change the maximum time interval that locks on data blocks can be held by Smart View (or other grid clients') users. When a client data-block lock is held for more than the time out interval, Essbase removes the lock and the transaction is rolled back. The default interval is 60 minutes. This setting affects all databases in the application.

set max_lro_file_size
Specify a maximum file size for Linked Reporting Objects (LRO) attachments. There is no default. There is no minimum or maximum value, excepting limitations imposed by your system resources.

set minimum permission
Grant all users a minimum level of permission to all databases in the application. Users with higher permissions than this minimum are not affected.

set variable
Assign a string value to an existing substitution-variable name. If the variable does not exist, first create it using **add variable**. Substitution variables may be referenced by calculations in the application.

set cache_size
Set the maximum size to which the application cache may grow. The application cache grows dynamically until it reaches this limit. The application cache is used for hybrid aggregation in block storage databases, and can help you manage memory usage for retrievals. This setting takes effect after you restart the application. To check the currently set limit, use the following MaxL statement:

```
query application APP-NAME get cache_size;
```

set type unicode_mode
Migrate an application to Unicode mode. Migration to Unicode mode cannot be reversed.

load database
Start (by loading into memory) an idle database. The statement will fail if you do not have at least read privilege for the database.

unload database
Stop (by unloading from memory) an active database. The statement will fail if you do not have at least read privilege for the database.

enable startup
Permit all users to load (start) the application. This only applies to users who have at least read privilege for the application. Startup is enabled by default.

disable startup
Prevent all users from loading (starting) the application. Startup is enabled by default.

enable autostartup
Start the application automatically when Essbase Server starts. By default, autostartup is disabled.

disable autostartup
Do not start the application automatically when Essbase Server starts. By default, autostartup is disabled.

enable commands
Allow all users with sufficient permissions to make requests to databases in the application. Use to reverse the effect of **disable commands**. The disable commands setting remains in effect only for the duration of your session. By default, commands are enabled.

disable commands
Prevent all requests to databases in the application, including non-data-specific requests, such as viewing database information or changing database settings. All users are affected, including other administrators. Administrators are affected by this setting as a safety mechanism to prevent accidental updates to databases during maintenance operations. This setting remains in effect only for the duration of your session. The setting takes effect immediately, and affects users who are currently logged in, as well as users who log in later during your session.

> **Caution:**
>
> If performing maintenance operations that require disabling commands, you must make those maintenance operations within the same session and the same script as the one in which commands were disabled.

By default, commands are enabled.

enable updates
Allow all users with sufficient permissions to make requests to databases in the application. Use to reverse the effect of **disable updates**. Disabling updates remains in effect only for the duration of your session. By default, updates are enabled.

disable updates
Prevent all users from making requests to databases in the application. Use before performing update and maintenance operations. The disable updates setting remains in effect only for the duration of your session.

> **Caution:**
>
> If performing maintenance operations that require updates to be disabled, you must make those maintenance operations within the same session and the same script as the one in which updates were disabled. By default, updates are enabled.

enable connects
Allow all users with sufficient permissions to make connections to databases in the application. Use to reverse the effect of **disable connects**. By default, connections are enabled.

disable connects
Prevent any user with a permission lower than Application Managers from making connections to the databases that require the databases to be started. This includes starting the databases or performing the ESSCMD shell SELECT command on the databases. Database connections remain disabled for all databases in the application, until the application setting is re-enabled by the administrator.
By default, connections are enabled.

enable security
When security is disabled, Essbase ignores all security settings in the application and treats all users as Application Managers. By default, security is enabled.

disable security
When security is disabled, Essbase ignores all security settings in the application and treats all users as Application Managers. By default, security is enabled.

comment
Enter an application description (optional). The description can contain up to 80 characters.

clear logfile
Delete the application log located in the application directory. A new log is created for entries recording subsequent application activity.

add variable
Create an application-level substitution variable by name, and optionally assign a string value for the variable to represent. You can assign or change the value later using **set variable**. A substitution variable acts as a global placeholder for information that changes regularly. Substitution variables may be referenced by calculations and report scripts.
If substitution variables with the same name exist at server, application, and database levels, the order of precedence for the variables is as follows: a database level substitution variable supersedes an application level variable, which supersedes a server level variable.

drop variable
Remove a substitution variable and its corresponding value from the application.

rename to
Rename the application. When you rename an application, the application and the application directory are renamed.

Example

```
alter application Sample set minimum permission read;
```

Grants all users read access to all databases in the Sample application. Users can retrieve data values and run report scripts.

```
alter application Sample disable commands;
```

Prevents all users from making requests to the application scope. Use this statement before performing application-wide update and maintenance operations.

```
alter application Acme set variable Current_month July;
```

Assigns the string value July to the substitution variable "Current_month." "Current_month" may be referenced by calculations in the Acme application.

Alter Database

The MaxL alter database statement helps you change Essbase database-wide settings.

Click here for aggregate storage version

Select a subset of **alter database** to view the syntax options:

- Alter Database enable | disable
- Alter Database Set
- Alter Database (Misc)

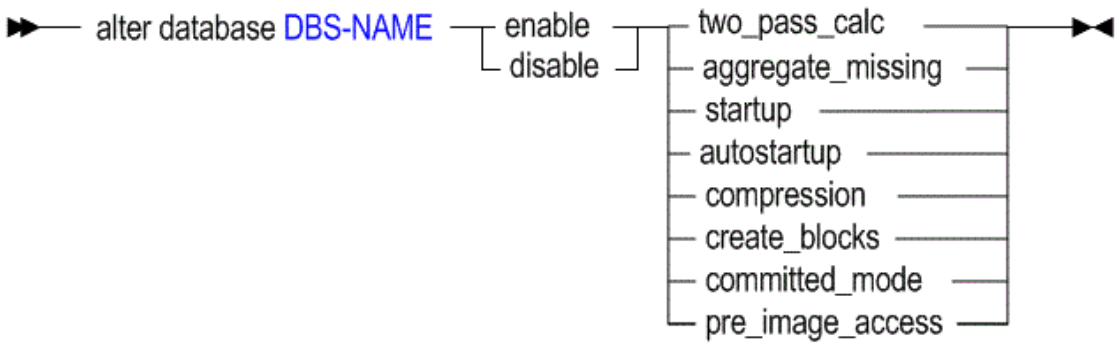
Alter Database enable | disable

The MaxL alter database statement with enable|disable keywords helps you turn on and off Essbase database-wide functionality.

Click here for aggregate storage version

Permission required: create_application.

Syntax



DBS-NAME

Use **alter database** to change the following database-wide settings:

Keywords

enable two_pass_calc

> **Note:**
>
> Do not use two-pass calculation with hybrid mode cubes. Only use solve order.

Recalculate (after a default calculation) database outline members tagged as Two Pass, so they will be recalculated after other database members have been consolidated. This setting is enabled by default.
Members that usually require a two-pass calculation are those members of the Accounts dimension that are calculated by a formula rather than by hierarchical consolidation. These members are typically ratios, such as "Profit % Sales" (profit percentage of sales), which has a member formula.
This setting is ignored during a calculation script; it is used only during a default calculation. To use two-pass calculation in a non-default calculation, use the CALC TWOPASS command in the calculation script.

disable two_pass_calc
Do not recalculate database outline members tagged as Two Pass after a default calculation. Two-pass calculation is enabled by default.

enable aggregate_missing
Consolidate #MISSING values along with the regular database consolidation. If you never load data at parent levels, aggregating #MISSING values can improve calculation performance, depending on the ratio between upper level blocks and input blocks in the database.
If this setting is enabled and you load values directly at the parent level, these parent-level values will be replaced by the results of the consolidation, even if the results are #MISSING values. The aggregate missing setting is disabled by default.

disable aggregate_missing
Do not consolidate #MISSING values. This is the default. Data that is loaded at parent levels is not overwritten by #MISSING values of children below it. However, if any of the child data values are not #MISSING, these values are consolidated and overwrite the parent values.

enable startup
Enable users to start the database directly or as a result of requests requiring the database to be started. Startup is enabled by default.

disable startup
Prevent all users from starting the database directly or as a result of requests that would start the database. Startup is enabled by default.

enable autostartup
Automatically start the database when the application to which it belongs starts. Autostartup is enabled by default. This setting is applicable only when startup is enabled.

disable autostartup
Prevent automatic starting of the database when the application to which it belongs starts. Autostartup is enabled by default.

enable compression
Enable data compression. By default, Bitmap compression is enabled. To switch to a different compression type, use `alter database set compression`.

disable compression
Disable data compression. By default, Bitmap compression is enabled.

enable create_blocks
Allow Essbase to create a data block when you assign a non-constant value to a member combination for which a data block does not already exist. Block creation on equation is disabled by default, because it can result in a very large database.
When you assign a constant to a member on a sparse dimension, you do not need to enable Create Blocks on Equation, because Essbase would create a data block anyway. For example, `"West = 5;"` would result in the creation of data blocks, with or without the Create Blocks on Equation setting enabled.
You do need to check this option if you want blocks created when you assign anything other than a constant to a member on a sparse dimension for which a data block does not already exist. For example, if no data exists for Actuals, a member of a sparse Scenario dimension, then you need to enable Create Blocks on Equation in order to perform the following allocation:

```
2002Forecast = Actuals * 1.05;.
```

disable create_blocks
Turn off the Create Blocks on Equation setting. The setting is disabled by default.

enable committed_mode

> **Note:**
>
> Committed access mode for a cube is no longer supported beginning in Essbase 21c.

Committed access means that only one transaction at a time can update data blocks. Essbase holds read/write locks on all data blocks until the transaction and the commit operations are performed. If pre-image access is enabled, users (or transactions) can still have read-only access to data at its last commit point. For more information, see the `enable pre_image_access` setting. The default isolation-level mode is Uncommitted, but Smart View and other grid clients' data-update operations are always in committed mode.

disable committed_mode
Turn off the Committed Mode setting, reverting to the default isolation level of Uncommitted for the database.

> **Note:**
>
> Smart View and other grid clients' data-update operations are always in committed mode.

In uncommitted mode, Essbase allows transactions to hold read/write locks on a block-by-block basis. Essbase releases a block after it is updated, but does not commit blocks until the

transaction is completed, or until a specified number of blocks or rows (a "synchronization point") has been reached. You can set this limit using the `implicit_commit` settings.

enable pre_image_access
Committed access mode for a cube is no longer supported beginning in Essbase 21c. The following description is relevant only for releases before Essbase 21c.
Allow users (or other transactions) read-only access to data at its last commit point, when the database is in committed mode (meaning that data blocks may be locked for the duration of a concurrent transaction). Pre-image access is enabled by default when the database is in committed mode.

disable pre_image_access
Disable pre-image access, disallowing read-only access to locked blocks of data at their last commit point (this setting is only applicable while the database is in committed mode). Pre-image access is enabled by default when the database is in committed mode.

Example

```
alter database Sample.Basic disable two_pass_calc;
```

Prevents recalculation (after a default calculation) of members tagged as Two Pass.

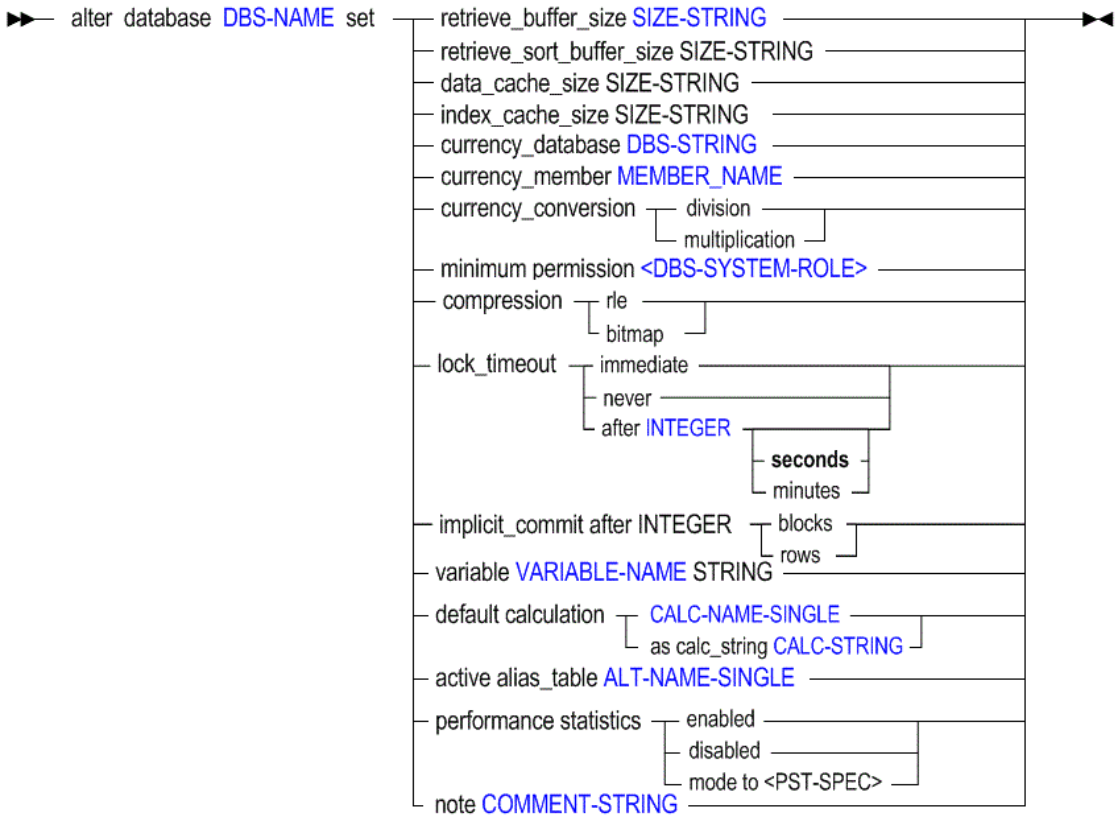
Alter Database Set

The MaxL alter database statement with set keyword helps you modify Essbase database-wide settings.

Click here for aggregate storage version

Permission required: create_application.

Syntax



- DBS-NAME
- SIZE-STRING
- DBS-STRING
- MEMBER-NAME
- DBS-SYSTEM-ROLE
- INTEGER
- VARIABLE-NAME
- CALC-NAME-SINGLE
- CALC-STRING
- ALT-NAME-SINGLE
- COMMENT-STRING

Use **alter database set** to change the following database-wide settings:

Keywords

retrieve_buffer_size
Change the database retrieval buffer size. This buffer holds extracted row data cells before they are evaluated by the RESTRICT or TOP/BOTTOM Report Writer commands. The default size is 20 KB. The minimum size is 2 KB. Increasing the size may improve retrieval performance.

retrieve_sort_buffer_size
Change the database retrieval sort buffer size. This buffer holds data until it is sorted. The Report Writer and Essbase Query Designer use the retrieval sort buffer. The default size is 20 KB. The minimum size is 2 KB. Increasing the size may improve retrieval performance.

data_cache_size
Change the data cache size. The data cache is a buffer in memory that holds uncompressed data blocks. Essbase Server allocates memory to the data cache during data load, calculation, and retrieval operations as needed. The default and minimum size is 3072 KB.

index_cache_size
Change the index cache size. The index cache is a buffer in memory that holds index pages. When a data block is requested, Essbase looks at the index pages in the index cache to find its location on disk.

- Minimum value: 1 MB (1,048,576 bytes)
- Maximum value: 256 TB

  Default value for buffered I/O: 1 MB (1,048,576 bytes)

Buffered I/O is the default for this release.

currency_database
Link the database with a currency database. A currency database enables you to convert currency values in a database from one currency into another currency.

currency_member
Specify the member to use as a default value in currency conversions. You can specify any valid member of the dimension defined as "Currency Type" in the currency database.

currency_conversion
Specify whether during currency conversion, the calculation method multiplies the currency database exchange rates with the main database values, or that the currency database exchange rates are divided by the main database values.

minimum permission
Set a level of permission that all users or groups can have to the database. Users or groups with higher granted permissions than the minimum permission are not affected.

compression rle
Set the database to use run-length encoding (RLE) compression. Essbase compresses repetitive, consecutive values, including zeros and #MISSING values. The default compression type is bitmap.
When a compressed data block is brought into the data cache, Essbase expands the block to its full size, regardless of the scheme that was used to compress it.

compression bitmap
Set the database to use bitmap compression, the default. Essbase stores only non-missing values and uses a bitmapping scheme.
When a compressed data block is brought into the data cache, Essbase expands the block to its full size, regardless of the scheme that was used to compress it.

lock_timeout
Change the interval to wait for blocks to be unlocked when the database is in committed mode. If a transaction request is made that cannot be granted in the allotted time, the transaction is rolled back until a lock can be granted.

> **Note:**
>
> Smart View and other grid clients' data-update operations are always in committed mode.

implicit_commit after <number> blocks
When uncommitted access is enabled, set the frequency at which Essbase commits data blocks (after the specified number of blocks has been reached).
The default frequency, if unspecified, is 3000, and may adjust dynamically during a calculation.
If Essbase Server runs on Oracle Exalytics In-Memory machine, for calculation and data load requests, the commit happens at the end of the command or request, and the default interval of 3000 (or any other value you specify) is ignored.

implicit_commit after <number> rows
When uncommitted access is enabled, set the frequency at which Essbase commits data blocks (after the specified number of rows has been reached).

variable
Change the value of an existing substitution variable on the database. The value must not exceed 256 bytes. It may contain any character except a leading ampersand (&).

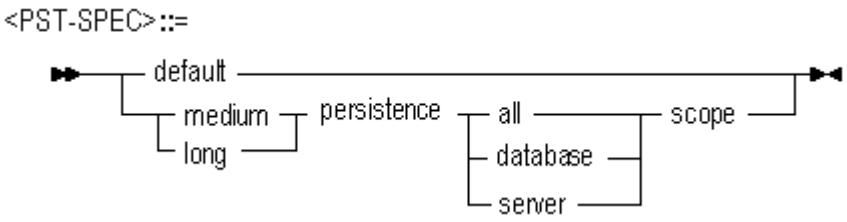
default calculation
Change the default calculation (which, by default, is `CALC ALL;`) to the stored calculation script you specify, or to an anonymous (unstored) calculation string.

active alias_table
Set an alias table as the primary table for reporting and any additional alias requests. Only one alias table can be used at a time. This setting is user-specific; it only sets the active alias table for the user issuing the statement.

performance statistics enabled
Turn on performance-statistics gathering. You might do this when you want to tune the system, change hardware configuration, or monitor I/O. The measurement begins for current processes as soon as you enable it. Any subsequent queries for statistics return measurements spanning from the time of enablement to the time of the query. Performance statistics can be retrieved using query database.

performance statistics disabled
Turn off performance-statistics gathering. This halts the collection of statistics; it does not prevent anyone from retrieving old statistics using query database.

performance statistics mode to <PST-SPEC>
Reset performance-statistics gathering for a specified persistence and scope. Each of the statistics tables available using `query database` has a pre-defined persistence and scope. When you use `set performance statistics mode`, you select the persistence and scope to reset, and the collecting of measurements starts over for the applicable tables.



note
Create an informational note about the database that Smart View or other grid client users can see from the login dialog box. For example, `'Calc in progress: do not update.'` Database notes can be up to 64 kilobytes long.

Example

```
alter database Sample.Basic set lock_timeout after 120;
```

Changes the number of seconds to wait for blocks to be unlocked. If a transaction request is made which cannot be granted in 120 seconds, the transaction is rolled back until a lock can be granted.

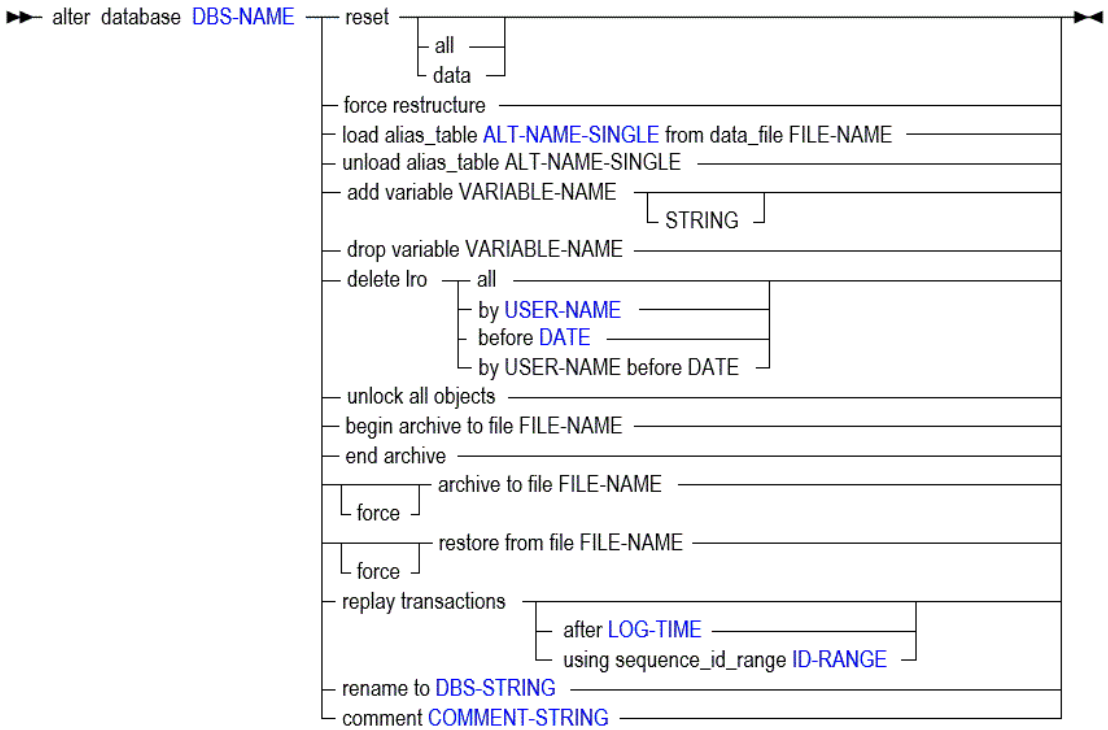
Alter Database (Misc)

The MaxL alter database statement used with various action keywords helps you perform actions on Essbase databases.

Click here for aggregate storage version

Permission required: create_application.

Syntax



- DBS-NAME
- FILE-NAME
- ALT-NAME-SINGLE
- USER-NAME
- DATE
- LOG-TIME
- ID-RANGE
- DBS-STRING
- COMMENT-STRING

Use **alter database** to change the following database-wide settings:

Keywords

reset
Clear all data and linked-reporting objects from the database, but preserve the outline.

reset all
Clear all data, Linked Reporting Objects, and the outline.

reset data
Same as using `reset`.

force restructure
Explicitly restructure the database to eliminate or reduce fragmentation. By default, this statement is run in serial. To enable parallel restructuring, use the RESTRUCTURETHREADS configuration setting.

load alias_table
Load an alias table from a file to the current database. The feeder file (`FILE-NAME`) must follow these rules:

- Must be correctly formatted.
- Must be located on the Essbase Server, in the cube directory (not on a client computer).

  See Environment Locations in the Essbase Platform for information about <Application Directory>, cube directory, and other directory locations in Essbase.
- `FILE-NAME` must include the full path.

Sample contents of a feeder file for loading an alias table:

```
$ALT_NAME
"400-10"        Guava
"400-20"        Tangerine
"400-30"        Mango
$END
```

unload alias_table
Delete the specified alias table.

add variable
Create a database-level substitution variable by name, and optionally assign a string value for the variable to represent. You can assign or change the value later using `set variable`. A substitution variable acts as a global placeholder for information that changes regularly. Substitution variables may be referenced by calculations and report scripts.
If substitution variables with the same name exist at server, application, and database levels, the order of precedence for the variables is as follows: a database level substitution variable supersedes an application level variable, which supersedes a server level variable.

drop variable
Remove a substitution variable and its corresponding value from the database.

delete lro
Delete Linked Reporting Objects linked to the active database for a given user name or modification date.

unlock all objects
Unlock all objects on the database that are in use by a user or process.

begin archive to file
Prepare the database for backup by an archiving program, and prevent writing to the files during backup.
This statement requires the database to be started.
Begin archive achieves the following outcomes:

- Commits any modified data to disk.
- Switches the database to read-only mode. The read-only state persists, even after the application is restarted, until it is changed back to read-write using `end archive`.
- Reopens the database files in shared, read-only mode.
- Creates a file containing a list of files that need to be backed up. Unless a different path is specified, the file is stored in the database directory.

Begin archive and end archive do not perform the backup; they simply protect the database during the backup process.

> **Note:**
>
> Using the **begin archive to file** and **end archive** grammar is the only supported way to initiate backup and recovery of a database using MaxL.

end archive
Return the database to read-write mode after backing up the database files.
This statement requires the database to be started.
End archive achieves the following outcomes:

- Returns the database to read-write mode.
- Re-opens database files in exclusive, read-write mode.

> **Note:**
>
> Using the **begin archive to file** and **end archive** grammar is the only supported way to initiate backup and recovery of a database using MaxL.

replay transactions
Replays the database transactions that were logged after the last replay request was originally executed or after the last restored backup's time (whichever occurred later).
Transactions that are executed and logged after the restore operation are not replayed, unless you replay those transactions using their sequence IDs. After restoring a database, Oracle recommends that you finish replaying the transactions that were logged after the backup and before the restore and that are needed to fully recover the database; then you can continue executing new transactions.

replay transactions after LOG-TIME
Replays the transactions that were logged after the specified time. Enclose the TIME value in quotation marks; for example: '11_20_2007:12:20:00'

replay transactions using sequence_id_range ID-RANGE
Replays the transactions specified by a comma-separated list of sequence ID ranges. A range can consist of:

- A single transaction: *n* to *n*; for example, 1 to 1
- Multiple transactions: *x* to *y*; for example, 20 to 100

Each logged transaction is assigned a sequence ID, indicating the order in which the transaction was performed. To ensure the integrity of the restored data after a replay, Essbase enforces the replay of transactions in the same order in which they were originally performed. The order of sequence IDs are tracked across multiple replay commands.

> **Note:**
>
> You can skip replaying a transaction if you are absolutely sure that the transaction results are not required to recover the database.

rename to
Rename the database. When you rename a database, the database directory is also renamed.

comment
Create a description of the database. The maximum number of characters is 80. This description is available to database administrators. To annotate the database for Smart View or other grid client users, use `set note`.

Example

```
alter database Sample.Basic load alias_table "Long Names" from data_file
'newalias.alt';
```

Imports the alias table `newalias.alt` into Sample Basic. The file `newalias.alt` must be already uploaded to the Sample Basic cube directory.

```
alter database Sample.Basic begin archive to file 'samplebasic.arc';
```

Backs up the Sample.Basic database files to the specified archive file (`samplebasic.arc`).

```
alter database Sample.Basic end archive
```

Returns the Sample.Basic database to read-write mode after backing up the database files.

```
alter database Sample.Basic replay transactions using sequence_id_range 1 to
10,20 to 100;
```

Replays the transactions in the Sample.Basic database with sequence IDs 1 through 10 and 20 through 100.

```
alter database Sample.Basic replay transactions after '11_20_2007:12:20:00';
```

Replays all transactions that were logged after the specified time.

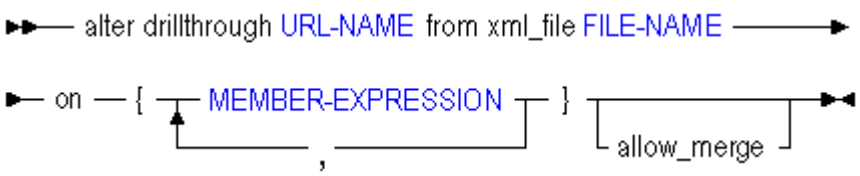
Related Topics

- Alter Database enable | disable
  The MaxL alter database statement with enable|disable keywords helps you turn on and off Essbase database-wide functionality.
- Alter Database Set
  The MaxL alter database statement with set keyword helps you modify Essbase database-wide settings.

Alter Drillthrough

The MaxL alter drillthrough statement helps you edit drill-through URL definitions linking Essbase to content hosted on Oracle ERP and EPM applications.

Syntax



- URL-NAME
- FILE-NAME
- MEMBER-EXPRESSION

Use **alter drillthrough** to edit a URL definition in the following ways:

Keywords

alter drillthrough
Edit drill-through URL metadata.
The number of drill-through URLs per database is limited to 255.

from xml_file
Indicate the path to the local URL XML file that defines the link information.
The URL XML is created by the ERP or EPM application that deployed the Essbase database. The XML contains the drill-through URL display name as well as a URL enabling the hyperlink from a cell to a Web interface to occur. For a sample URL XML file, see Create Drillthrough.

on {<member-expression>,...}
Define the list of drillable regions, using the same Essbase member-set calculation language that is used to define security filters. The list of drillable regions must be enclosed in {brackets}.
The number of drillable regions in a drill-through URL is limited to 256. The number of characters per drillable region is limited to 65536.

allow_merge
Optional: Merge the drillable-region definition instead of replacing it on update.

Example

```
alter drillthrough sample.basic.myURL from xml_file "C:/drillthrough/data/
myfile.xml" on {'@Ichildren("Qtr1")', '@Ichildren("Qtr2")'} allow_merge;
```

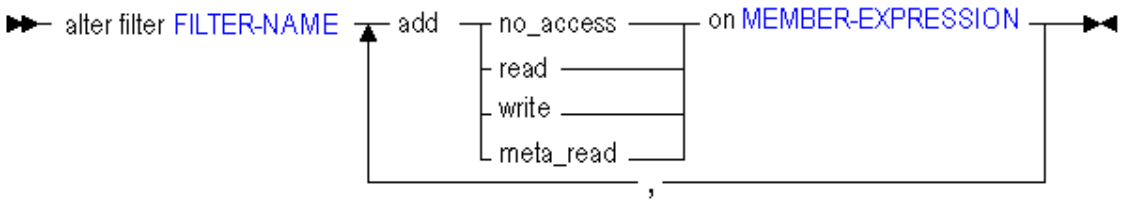
Alter Filter

The MaxL alter filter statement helps you add rows to an Essbase database's security filter.

Filters control security for database objects. Use grant to assign filters to users and groups.

Minimum permission required: Database Manager.

Syntax



- FILTER-NAME
- MEMBER-EXPRESSION

Use **alter filter** in the following ways to edit a filter:

Keywords

alter filter ...add no_access on <member-expression>
Block access to a specified member combination.

alter filter ... add read on <member-expression>
Provide read-only access to a specified member combination.

alter filter ... add write on <member-expression>
Provide write access to a specified member combination.

alter filter ... add meta_read on <member-expression>
Restrict access to siblings and ancestors of the member expression. In case of a filtering conflict, the MetaRead filtering overrides the other filter permissions. For more information about metatdata filtering, see Metadata Filtering.

Notes

- Filters created using MaxL must be valid. For information about filter syntax, see Create Filters.
- MEMBER-EXPRESSION must be enclosed in single quotation marks. It can be a comma-separated list.

Example

```
alter filter sample.basic.filt7 add read on '@Descendants("East")';
```

Adds a row to a Sample.Basic filter named filt7, giving read-only access to the data for the eastern states.

```
alter filter sample.basic.filt8 add read on '@Descendants("East")', add write
on '@Descendants("West")';
```

Adds two rows to a Sample.Basic filter named filt8.

Alter Group

The MaxL alter group statement helps you remove a filter assignment from an Essbase group.

This statement does not remove filter assignments granted to individual users. To remove filter assignments to users, use Alter User.

Permission required: see About Filters.

Syntax

- GROUP-NAME
- FILTER-NAME

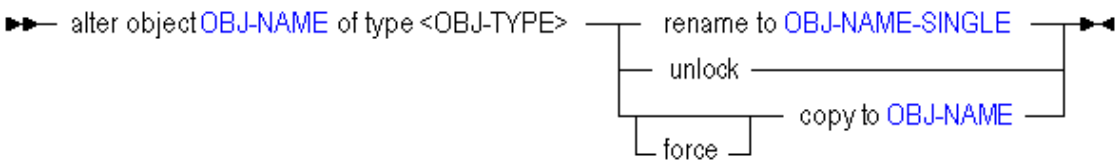
Example

```
alter group MyGroup revoke filter Sample.Basic.filt1;
```

Alter Object

The MaxL alter object statement helps you rename, unlock, or copy artifacts related to an Essbase database.

Syntax



- OBJ-NAME
- OBJ-NAME-SINGLE

Use **alter object** to edit artifacts in the following ways:

Keywords

rename to
Rename the artifact. Not applicable for partition files, worksheets, or outlines.

unlock
Unlock an artifact that is locked by another user or process. Not applicable for alias tables and worksheets. Unlocking an artifact of type `lro` is applicable for stored linked-reporting objects only; that is, files with the `.LRO` extension.

> **Note:**
>
> To unlock all database artifacts, use `alter database DBS-NAME unlock all objects;`.

copy to
Make a copy of a server artifact. Not applicable for partition files, worksheets, or outlines. If an artifact of the new name already exists, it is replaced.

force copy to
Make a copy of a server artifact. Not applicable for partition files, worksheets, or outlines. If an artifact of the new name already exists, it is replaced. If an administrator issues the statement with the **force** keyword, locked artifacts are unlocked, copied, and re-locked.

Notes

- Specified artifacts must be persisted in the database directory.
- Attempting to rename or copy an artifact of type "partition_file" returns an error.

Example

```
alter object sample.basic.genref of type rules_file rename to 'level';
```

Renames a rules file in the Sample.Basic directory, named `genref.rul`, to `level.rul`.

```
alter object sample.basic.Calcdat of type text rename to 'c_data';
```

Renames a text file in the Sample.Basic directory, named `calcdat.txt`, to `c_data.txt`.

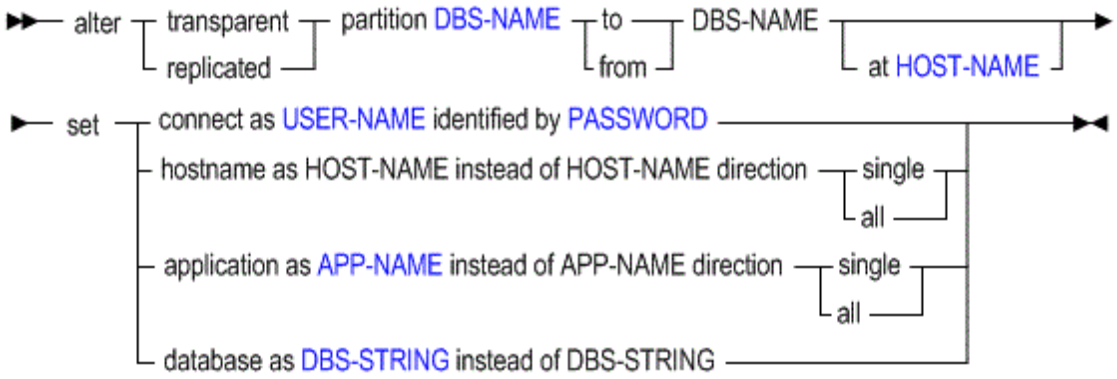
```
alter object samppart.company.company of type partition_file unlock;
```

Unlocks the partition definition file for the Samppart Company database.

Alter Partition

The MaxL alter partition statement helps you fix invalid or dangling Essbase partition references, by changing the authorized user who can connect to both cubes, or by changing application, cube, or host names in the event something was moved or renamed.

Syntax



- DBS-NAME
- HOST-NAME
- USER-NAME
- PASSWORD
- APP-NAME
- DBS-STRING

Use **alter partition** to edit partitions in the following ways:

Keywords

...set connect
Change the user authorized to access the partitioned cubes.

...set hostname
Edit the partition definition to include the correct URL for the partition source cube, target cube, or both.

...set application as
Edit the partition definition to include a corrected application name. This is useful if *one* application name was changed; if both application names changed, the partition definition cannot be corrected and you must re-create it.

...set database as
Edit the partition definition to include a corrected cube name. This is useful if *one* cube name was changed; if both cube names changed, the partition definition cannot be corrected and you must re-create it.

...direction single
See Examples 2 and 5.

...direction all
See Examples 3, 4, and 6.

Notes

- The first DBS-NAME is the local cube, and the second DBS-NAME is the remote cube.
- Directing a partition *to* the remote site means the current cube is the source. Creating a partition *from* the remote site means the current cube is the target.
- To change the authorized partition user, you must change the user for both partitioned cubes, as shown in Example 1.
- If a partitioned host, application, or cube is renamed, the rename does not propagate to the partition definition, so you must use alter partition to change the name in the partition definition. You must give the old name and the new name. If both names were changed, the partition definition is not recoverable, and must be re-created. Exception: Host names can be updated on source and target, as shown in Example 4.

Example

Example 1 – Change Partition User

The following example changes the user authorized to access the partitioned cubes.

```
/* To change authorized partition user on target, log in to source & then
use: */
       alter transparent partition app1.source to app2.target
       set connect as newuser identified  by newpasswd;

/* To change authorized partition user on source, log in to target & then
use: */
       alter transparent partition app2.target from app1.source
       set connect as newuser identified  by newpasswd;
```

Example 2 – Update One Host Name for Target

In the following example, `alter partition` is used to fix a partition definition that became invalid when a URL changed and affected only one half of the partition definition (app2.target):

```
alter transparent partition app1.source to app2.target at "https://
myserver1.example.com:9001/essbase/agent"
     set hostname as "https://myserver2.example.com:9001/essbase/agent"
instead of "https://myserver1.example.com:9001/essbase/agent" direction
single;
```

where `direction single` indicates that only the target URL needs to be changed.

Example 3 – Update One Host Name for Source and Target

In the following example, `alter partition` is used to fix a partition definition that became invalid when one host-name change affected both the source and the target, because both applications were on the same host:

```
alter transparent partition app1.source to app1.target at "https://
myserver2.example.com:9001/essbase/agent"
```

```
     set hostname as "https://myserver2.example.com:9001/essbase/agent"
instead of "https://myserver1.example.com:9001/essbase/agent" direction all;
```

where `direction all` indicates that the host-name change needs to be made on both the target and source halves of the partition definition.

Example 4 – Update Host Name for Source and Target

In the following example, `alter partition` is used to fix a partition definition that became invalid when target and source cubes that were on different hosts are both moved to the same new host:

```
alter transparent partition app1.target from app2.source set hostname as
"https://myserver3.example.com:9001/essbase/agent" instead of "https://
myserver1.example.com:9001/essbase/agent" direction all;
```

OR

```
alter transparent partition app1.target from app2.source set hostname as
"https://myserver3.example.com:9001/essbase/agent" instead of "https://
myserver2.example.com:9001/essbase/agent" direction all;
```

where `direction all` indicates that the host-name change needs to be made on both the target and source halves of the partition definition.

Example 5 – Update Source Application Name

In the following example, `alter partition` is used to fix a partition definition that became invalid when the source application name (`oldAppName`) changed to `newAppName`, and affected only one half of the partition definition:

```
alter transparent partition newAppName.source to app2.target
    set application as newAppName instead of oldAppName direction single;
```

where `direction single` indicates that only one half of the partition definition needs to be corrected.

> **Note:**
>
> The old application name can be discovered by issuing the `display partition` statement prior to correcting the partition definition.

Example 6 – Update Application Name for Source and Target

In the following example, `alter partition` is used to fix a partition definition that became invalid when the source application name (`oldAppName`) changed to `newAppName`, and affected both halves of the partition definition because both partitioned cubes were on the same application:

```
alter transparent partition newAppName.source to newAppName.target
     set application as newAppName instead of oldAppName direction all;
```

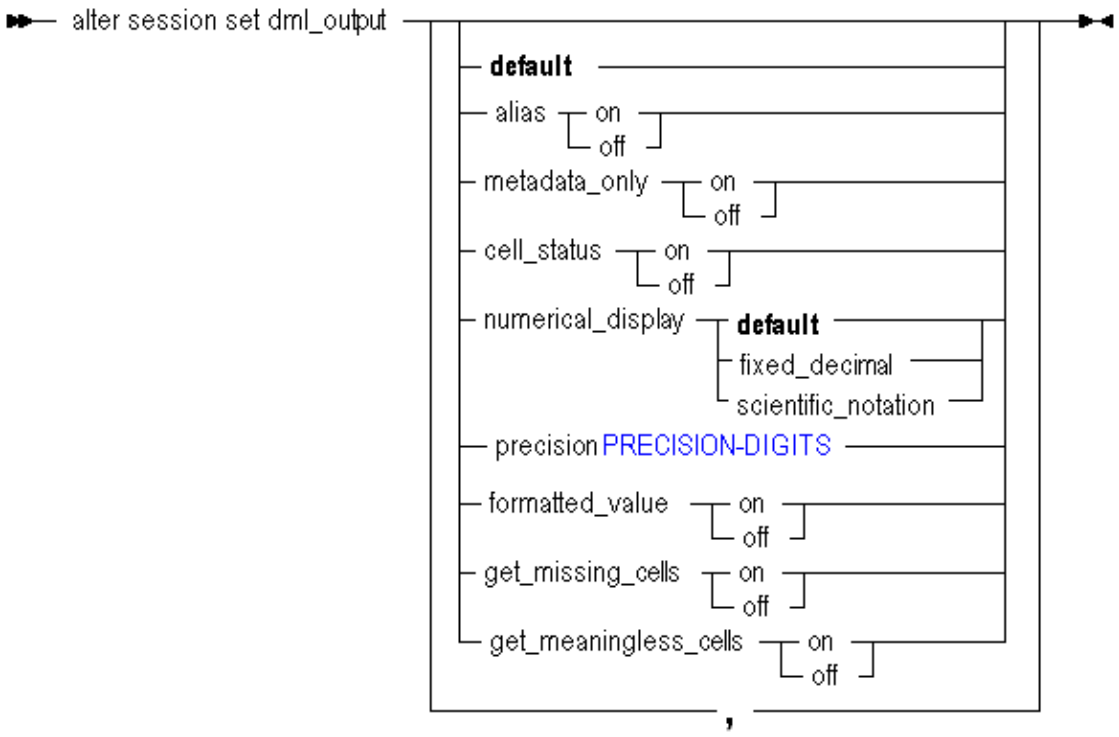
where `direction single` indicates both halves of the partition definition need to be corrected.

Alter Session

The MaxL alter session statement helps you set MDX display options for Essbase.

Set MDX display options.

Syntax



PRECISION-DIGITS

Use **alter session** to change the following MDX output settings:

Keywords

default
Revert to the default MDX display settings in the MaxL Shell. The default settings are: alias ON, metadata_only OFF, cell_status OFF.

alias on|off
Set whether to use aliases instead of member names.

metadata_only on|off
Set whether to show only the metadata, with no data.

cell_status on|off
Set whether to display cell status. Cell status is additional information returned with each cell value in MDX query outputs.

> **Note:**
>
> Every cell consists of one member from each dimension. Up to four cell-status types may be returned with the output:

- DC: Dynamic Calc. If any of the members defining the cell is Dynamic Calc, this status is on.
- RO: Read Only. If the cell cannot be written to (for example, by lock-and-send), this status is on. Security filters in the database might cause cells to be read-only. Dynamic Calc cells are automatically read-only.
- CM: Calculated Member. If any of the members defining the cell is a calculated member, this status is on.
- LO: Linked Object. If the cell has any associated Linked Reporting Objects, this status is on.

numerical_display fixed_decimal| scientific_notation|default
Set whether MaxL returns data values in MDX query output as fixed decimals, scientific notation, or default format (values are returned in a reasonable combination of decimals or scientific notation).

precision <precision-digits>
Set the number (0-15) of decimal places to include for the data values in MDX query output.

formatted_value on|off
Set whether to return formatted values for all cells of type text or date, or cells associated with a format string. By default, this setting is on.

get_missing_cells on|off
Set whether to return #Missing valued cells for all cells of type text or date, or cells associated with a format string. By default, this setting is on.

get_meaningless_cells on|off
Set whether to return #Meaningless for cells that are empty only because they are unassociated with the context attribute or varying attribute. By default, this setting is off, and the empty cells display as #Missing.
The following example query gets sales for all products, but the aggregation is specified by the slicer context only for Ounces_12.

```
SELECT
{Sales, Cogs}
ON COLUMNS,
 {Product.Levels(0).Members}
ON ROWS
FROM Sample.Basic
WHERE (Ounces_12)
;
```

A value of #Meaningless is displayed for any members not associated with the attribute Ounces_12.

Alter System

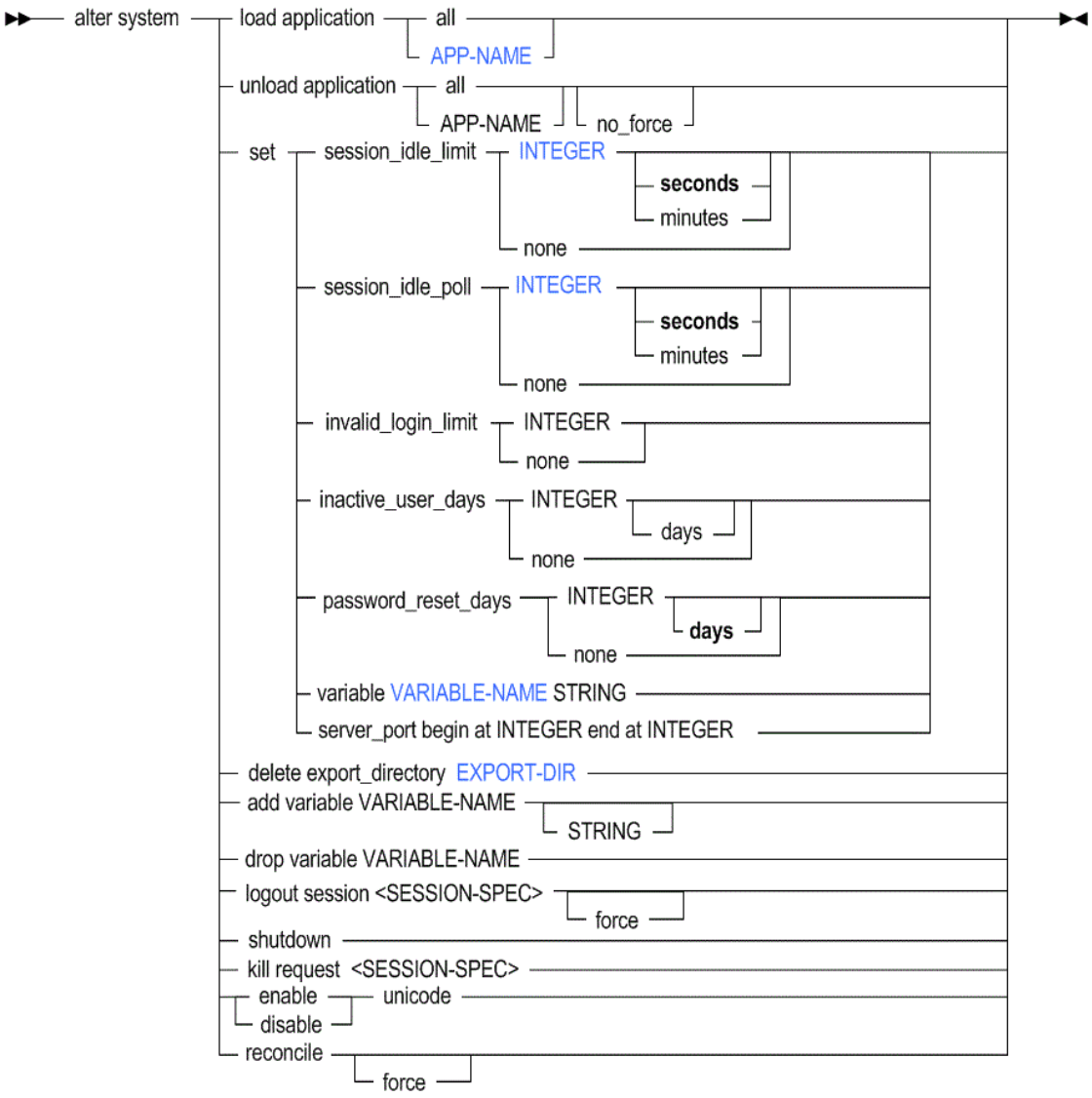
The MaxL alter system statement helps you change the state of the Essbase Server.

Click here for aggregate storage version

You can use this statement to start and stop applications, change system-wide variables, manage password and login activity, disconnect users, end processes, or shut down the server.

Permission required: Service Administrator.

Syntax



- APP-NAME
- INTEGER
- VARIABLE-NAME

- EXPORT-DIR

Use **alter system** to change the following system-wide settings:

Keywords

load application
Start an application, or start all applications on the Essbase Server.

unload application
Stop an application, or stop all applications on the Essbase Server. Unloading an application cancels all active requests and database connections, and stops the application. If Essbase encounters a problem when trying to cancel active requests and database connections, and stopping the application, an error is logged in the application log.
If you do not want to stop an application if it has active requests and database connections, use the **no_force** grammar. When using **no_force**:

- If the application has active requests and database connections, the application is not stopped; it continues running and returns an error
- If the application does not have active requests and database connections, the application is stopped, as if you used **unload application** without specifying **no_force**

set session_idle_limit
Set the interval of time permitted for a session to be inactive before Essbase Server logs off the user. The minimum limit that you can set is five minutes (or 300 seconds). When the session idle limit is set to **none**, all users can stay logged on until the Essbase Server is shut down.
The default user idle logout time is 60 minutes. When a user initiates a calculation in the background, after 60 minutes the user is considered idle and is logged out, but the calculation continues in the background.
Because the user may mistakenly assume that the calculation stopped because he or she was logged out, you can do one of the following to correct the user experience:

- Run the calculation in the foreground
- Increase the session idle limit in to a time that exceeds the duration of the calculation, or to none

set session_idle_poll
Set the time interval for inactivity checking. The time interval specified in the session idle poll tells Essbase how often to check whether user sessions have passed the allowed inactivity interval indicated by `session_idle_limit` in the **alter system** statement.

set invalid_login_limit
Set the number of unsuccessful login attempts allowed by any user before the system disables it. When you change this setting, the counter resets to 0. When the invalid login limit is set to **none**, there is no limit. By default, there is no limit.

set inactive_user_days
Set the number of days a user account may remain inactive before being disabled by the system. The counter resets when the user logs in, is edited, or is activated by an administrator. When the inactive days limit is set to **none**, user accounts remain enabled even if they are not used. By default, there is no limit.

set password_reset_days
Set the number of days users may retain passwords. After the allotted number of days, users are prompted at login to change their passwords. The counter resets for a user when the user changes the password, is edited, or is activated by an administrator. When the password reset

days limit is set to **none**, there is no built-in limit for password retention. By default, there is no limit.

set variable
Change the value of an existing substitution variable on the system. The value must not exceed 256 bytes. It may contain any character except a leading ampersand (&).

set server_port
Expand a port range specified Essbase configuration properties. Each Essbase application uses two ports from this range. If no more ports are available, an error message is displayed.

> **Note:**
>
> You can expand port ranges only so that the beginning port range is less than SERVERPORTBEGIN and the ending port range is greater than SERVERPORTEND.

delete export_directory
Delete directories created for linked reporting objects exported from a database to a directory created in the application directory. Use this grammar after the exported LROs are migrated into a database using **import lro**, and the directories containing the exported LRO information are not needed.

> **Note:**
>
> This process works only for directories created in the application directory, using the DBS-EXPORT-DIR option of the export lro statement. It does not work for directories created elsewhere using the FULL-EXPORT-DIR option of the **export lro** statement.

To view a list of names of exported linked-reporting-objects directories in the application directory, use `display system export_directory`.

add variable
Create a system-level substitution variable by name, and optionally assign a string value for the variable to represent. You can assign or change the value later using **set variable**. A substitution variable acts as a global placeholder for information that changes regularly. Substitution variables may be referenced by calculations and report scripts.
If substitution variables with the same name exist at server, application, and database levels, the order of precedence for the variables is as follows: a database-level substitution variable supersedes an application-level variable, which supersedes a server-level variable.

drop variable
Remove a substitution variable and its corresponding value from the system.

logout session all
Terminate all user sessions running on the Essbase Server.

logout session...force
Terminate a session (or sessions) even if it is processing a request. The request is allowed to proceed to a safe point, and then the transaction is rolled back.

logout session <session-id>
Terminate a session by its unique session ID number. To see the session ID number, use display session.

logout session by user
Terminate all current sessions by a particular user, either across the entire Essbase Server, or limited to a specific application or database.

logout session by user on application
Terminate all current sessions by a particular user across a specific application.

logout session by user on database
Terminate all current sessions by a particular user across a specific database.

logout session on application
Terminate all current user sessions across a specific application.

logout session on database
Terminate all current user sessions across a specific database.

shutdown
Shut down the Essbase Server.

kill request all
Terminate all current requests on the Essbase Server.

> **Note:**
>
> To terminate your own active request in MaxL Shell, press the ESC key.

kill request <session-id>
Terminate the current request indicated by the session ID. You can obtain session IDs using display session.

kill request by user
Terminate all current requests by the specified user on the Essbase Server.

kill request on application
Terminate all current requests on the specified application.

kill request on database
Terminate all current requests on the specified database.

enable unicode
Set the Essbase Server to allow the creation of Unicode-mode applications and the migration of non-Unicode-mode applications to Unicode-mode applications.

disable unicode
Prevent the Essbase Server from allowing the creation of Unicode-mode applications or the migration of non-Unicode-mode applications to Unicode-mode applications.

reconcile
No longer applicable.

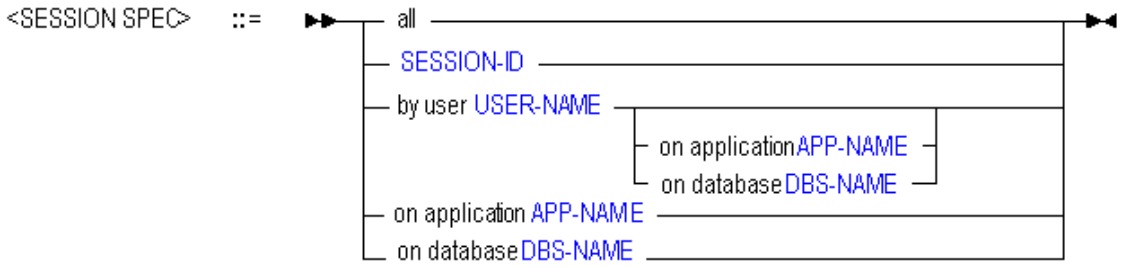
Notes

SESSION SPECIFICATION

A *session* is a single user connection to Essbase Server. The session can be identified by keywords and names indicating context, or by a unique session ID number.

A *request* is a query sent to Essbase Server by a user or by another process; for example, starting an application or restructuring a database outline. Only one request at a time can be processed in each session.

If a session is processing a request at the time that an administrator attempts to terminate the session, the administrator must either terminate the request first, or use the **force** kewyord available with **alter system** to terminate the session *and* the current request.



- SESSION-ID
- USER-NAME
- APP-NAME
- DBS-NAME

Example

```
alter system unload application Sample;
```

Stops the Sample application, if it is currently running.

```
alter system unload application all;
```

Terminates all active requests and stops all applications.

```
alter system unload application Sample no_force;
```

Essbase prepares to unload the Sample application; however, if active requests are running, the application is not stopped.

```
alter system shutdown;
```

Stops all running applications and shuts down Essbase Server.

```
alter system logout session by user Fiona;
```

Disconnects Fiona from any applications or databases to which she is connected.

To log out a user, log out the sessions owned by that user.

```
alter system set password_reset_days 10;
```

Specifies that all users will be prompted after 10 days to change their passwords. The day count for any user is reset when the user changes the password or is edited or reactivated by an administrator.

Alter Trigger

The MaxL alter trigger statement helps you enable or disable a trigger to track state changes over a selected Essbase cube area.

Syntax

- TRIGGER-NAME
- DBS-NAME

Use **alter trigger** to edit triggers in the following ways:

Keywords

enable
Essbase monitors the trigger during data load, calculation, or lock and send, and performs the trigger action when the condition is met on the specified cube area.

disable
Essbase does not monitor the trigger.

on database <DBS-NAME> disable
Disables all triggers in the database. A restart of the application or the database following the disable restores the triggers to the same state as before the disable was issued (all the triggers disabled using `alter trigger on database DBS-NAME disable` are re-enabled).

Example

```
alter trigger Sample.Basic.WatchCosts disable;


alter trigger on database sample.basic disable;
```

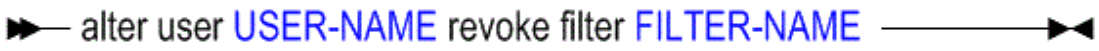
Alter User

The MaxL alter user statement helps you remove a filter assignment from an Essbase user.

This statement does not remove filter assignments gained by membership to groups. To remove filter assignments to groups, use Alter Group.

Permission required: see About Filters.

Syntax



- USER-NAME
- FILTER-NAME

Example

```
alter user Fiona revoke filter Sample.basic.filt1;
```

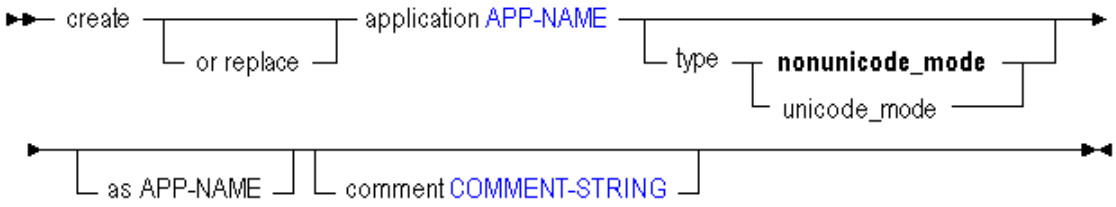
Create Application

The MaxL create application statement helps you create or re-create an Essbase application, either from scratch or as a copy of another application on the same server.

Click here for aggregate storage version

See APP-NAME for information on the maximum length of and special characters that are allowed in an application name. Application names are not case-sensitive.

Syntax



- APP-NAME
- COMMENT-STRING

Use **create application** to create an application in the following ways:

Keywords

create application
Create a new application. Application names are not case-sensitive.

create or replace application
Create an application, or replace an existing application of the same name. Application names are not case-sensitive.

...type nonunicode_mode
Create a Non Unicode-mode application. This is also the default if these keywords are omitted.

...type unicode_mode
Create a Unicode-mode application.

create application as
Create an application as a copy of another application. Application names are not case-sensitive.

comment
Create an application description (optional). The description can contain up to 80 characters.

Example

```
create application Sample comment 'This is a test application.';
```

Creates a new application called Sample with an associated comment.

```
create application Newsamp as Sample;
```

Creates an application called Newsamp which is a copy of the application Sample.

```
create or replace application Sample;
```

Creates an application called Sample. If an application named Sample already exists, it is overwritten.

Create Calculation

The MaxL create calculation statement helps you create, replace, or copy a stored Essbase calculation.

Permissions required:

- Database Manager to create database-level calculations.
- Application Manager to create application-level calculations.

Syntax

- CALC-NAME
- CALC-STRING

Use **create calculation** to create a calculation in the following ways:

Keywords

create calculation
Create a calculation script, the body of which is specified by CALC-STRING.

create or replace calculation
Create a calculation script, the body of which is specified by CALC-STRING. If a calculation script of that name already exists, it is replaced.

create calculation as
Create a calculation as a copy of another stored calculation.

Notes

- When creating database-level calculations, this statement requires the database to be started.
- A stored calculation can be associated with an application/database, or with an application only. To create an application-level calculation, use two tokens for CALC-NAME. To create a database-level calculation, use three tokens. See CALC-NAME for more details.
- Calculations created using MaxL must be valid. For information about calculation syntax, see Understanding Calculation Script Syntax.

Example

```
create or replace calculation sample.basic.Accts
'SET UPDATECALC ON;
CALC DIM(Accounts);'
;
```

Creates a calculation named Accts that is associated with sample.basic.

```
create calculation sample.basic.Accts2 as app.db.Accts
```

Creates a calculation named Accts2 on sample.basic that is a copy of another database's calculation named Accts.

Create Database

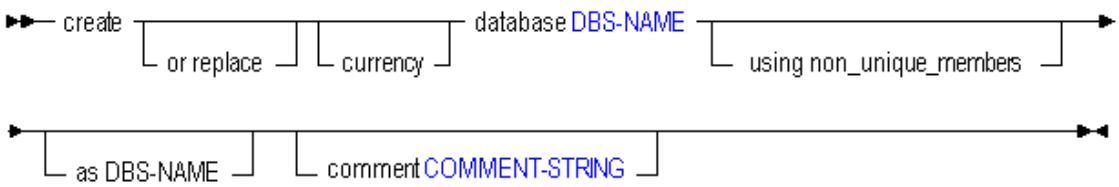
The MaxL create database statement helps you create or re-create an Essbase cube, optionally as a copy of another on the same server.

Click here for aggregate storage version

See DBS-NAME for information on the maximum length of and special characters that are allowed in a database name. Database names are not case-sensitive.

Permission required: Application Manager. To copy a database, Manager permission on the source database is additionally required.

Syntax



- DBS-NAME
- COMMENT-STRING

Use **create database** to create a database in the following ways:

Keywords

create database
Create a new database. Database names are not case-sensitive.

create or replace database
Create a database, or replace an existing database of the same name. Database names are not case-sensitive.

create database using non_unique_members
Create a database that supports the use of duplicate member names. Once you have created a database with a duplicate member outline, you cannot convert it back to a unique member outline.
For more information about duplicate member names, see Creating and Working With Duplicate Member Outlines.

create database as
Create a database as a copy of another database. Database names are not case-sensitive.

create currency database
Create or replace a database for currency conversion. Linking a currency database to a main database enables you to convert currency values in a database from one currency into another currency.

comment
Create a database description (optional). The description can contain up to 80 characters.

Example

```
create or replace database Sample.Basic comment 'This is a test.';
```

Creates a database called Basic within the Sample application. If a database named Basic within the Sample application already exists, it is overwritten.

```
create database Sample.New as Sample.Basic;
```

Creates a database called New within the Sample application that is a copy of the database Basic within the Sample application.

```
create currency database Sample.Interntl;
```

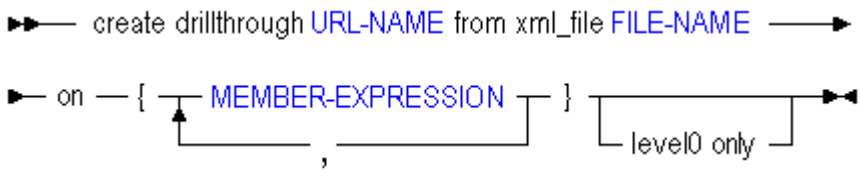
Creates a currency database called Interntl within the Sample application.

Create Drillthrough

The MaxL create drillthrough statement helps you create a drill-through URL within the active Essbase cube outline.

For each drillable region of a cube, you can enable drill-through access by means of a URL to Web content hosted on Oracle ERP and EPM applications.

Syntax



- URL-NAME
- FILE-NAME
- MEMBER-EXPRESSION

Use **create drillthrough** to create a drill-through URL definition in the following ways:

Keywords

create drillthrough
Create a drill-through URL as metadata.
The number of drill-through URLs per database is limited to 255.

from xml_file
Indicate the path to the local URL XML file that defines the link information.

The URL XML is created by the ERP or EPM application that deployed the cube. The XML contains the drill-through URL display name and a URL enabling the hyperlink from a cell to a Web interface to occur.
The following is a sample URL XML file:

```
<?xml version="1.0" encoding="UTF-8"?>
<foldercontents path="/">
  <resource name="Assets Drill through GL" description="" type="application/x-
hyperion-applicationbuilder-report">
    <name xml:lang="fr">Rapport de ventes</name>
    <name xml:lang="es">Informe de ventas</name>
    <action name="Display HTML" description="Launch HTML display of Content"
shortdesc="HTML">
      <url>/fusionapp/
Assetsdrill.jsp?$SSO_TOKEN$&$CONTEXT$&$ATTR(ds,pos,gen,level.edge)$
      </url>
    </action>
  </resource>
</foldercontents>
```

on {<member-expression>,...}
Define the list of drillable regions, using the same member-set calculation language that is used to define security filters. The list of drillable regions must be enclosed in {brackets}. The number of drillable regions in a drill-through URL is limited to 256. The number of characters per drillable region is limited to 65536.

level0 only
Optional: Restrict the URL definition to level-0 data.

Example

```
create drillthrough sample.basic.myURL from xml_file "myfile1.xml" on
{'@Ichildren("Qtr1")', '@Ichildren("Qtr2")'} level0 only;
```

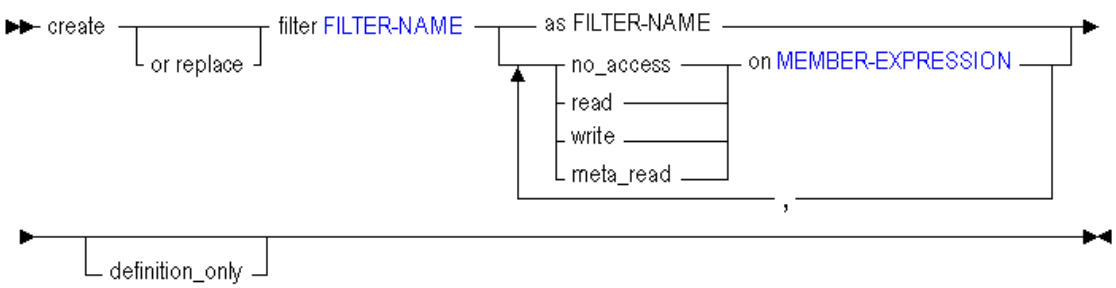
Create Filter

The MaxL create filter statement helps you create or re-create an Essbase security filter, either from scratch or as a copy of another filter on the same server.

Filters control security for database objects. Use grant to assign filters to users and groups.

Minimum permission required: Database Manager.

Syntax



- FILTER-NAME
- MEMBER-EXPRESSION

Use **create filter** to create a filter in the following ways:

Keywords

create filter
Create a security filter to restrict or permit access to specified database cells.

create or replace filter
Create a security filter or replace an existing security filter of the same name.

create filter ... no_access on <member-expression>
Create a filter blocking access to a specified member combination.

create filter ... read on <member-expression>
Create a filter providing read-only access to a specified member combination.

create filter ... write on <member-expression>
Create a filter providing write access to a specified member combination.

create filter ... meta_read on <member-expression>
Create a filter restricting access to siblings and ancestors of the member expression. In case of a filtering conflict, the MetaRead filtering overrides the other filter permissions. For more information about metatdata filtering, see Metadata Filtering.

create or replace filter ... definition_only;
Updates the filter definition while retaining user associations with the filter. If you replace a filter without using `definition_only`, then the filter must be re-granted to any users to whom it was assigned.

Notes

The member expression must be enclosed in single quotation marks. It can be a comma-separated list.

Example

```
create filter sample.basic.filt1 read on 'Jan, sales', no_access on
'@CHILDREN(Qtr2)';
```

Creates a filter to restrict privileges to Sample.Basic as follows: gives read-only access to the intersection of Jan and sales (sales data for January only); blocks access to children of Qtr2 (April, May, and June).

```
create or replace filter sample.basic.filt1 read on 'Sales,
@ATTRIBUTE(Bottle)';
```

Creates a filter (or changes an existing filter) to restrict privileges to Sample.Basic as follows: gives read-only access to sales data for products packaged in a bottle (product base dimension members associated with the Bottle attribute member).

Create Function

The MaxL create function statement helps you create or re-create your own registered Essbase calculation function, using a Java method.

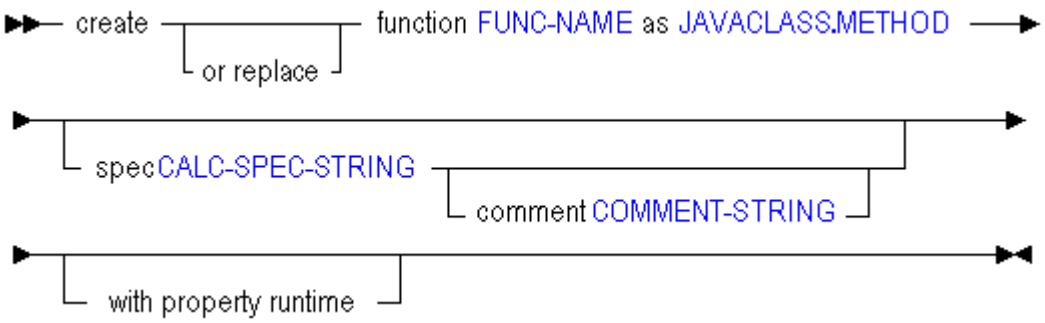
Minimum permission required:

- Application Manager to create a local (application-level) function.
- Administrator to create a global (system-level) function.

Process to follow:

1. Develop the functions in Java classes.
2. Use **create function** to register them in the Essbase calculator framework.
3. You can now use the functions in the same way that you use the standard Essbase calculation functions.

Syntax



- FUNC-NAME
- JAVACLASS.METHOD
- CALC-SPEC-STRING
- COMMENT-STRING

Use **create function** to create a function in the following ways:

Keywords

create function as
Register with Essbase a custom-defined function developed in Java, either as a global function usable by the entire Essbase Server, or as a local function available to an application. To register a global (server-wide) function, use one token for FUNC-NAME. To register a local (application-wide) function, use two tokens for FUNC-NAME.

create or replace function as
Register with Essbase a global or local custom-defined function. If a function with that name already exists in the custom-defined function and macro catalog, it is replaced.

spec
Enter, for the custom-defined function, an optional Essbase calculator-syntax specification string, such as in the following example: `@COVARIANCE (expList1, expList2)`. Use a

specification string if you wish the function to be returned by the output string of the IEssCube.getCalcFunctions Java method or EssListCalcFunctions C API function.

> **Note:**
>
> If you do not specify a calculation specification string, you cannot specify a comment either.

with property runtime
Designate the custom-defined function as a runtime function. Normally, Essbase pre-executes functions whose arguments are available at compilation time. The Runtime property prevents that optimization, executing functions that have constant values as operands (or no operands at all) for every block in the function range. If the built-in @CALCMODE(CELL) function is used, a custom-defined function declared as Runtime can execute on every cell in the range.

> **Note:**
>
> No built-in Essbase calculator functions have the Runtime property.

The Runtime property should be applied only in special circumstances, as it can seriously affect performance. The runtime property might be desirable for any custom-defined function whose return value depends on something besides its arguments; for example, the current date, or values in a rapidly changing relational table. If you created a runtime function @RANDOM() that returns a new random number each time it executes, then a member formula such as `"Mem1 = @RANDOM();"` would return different values for each block. At compilation time, the Runtime property prevents the pre-execution of functions that are applied to constants.

comment
Create a description of the function (optional). You cannot create a comment without also using **spec** to create a calculator-syntax specification string. The optional calculator-syntax specification string and the comment are used as the output string of the IEssCube.getCalcFunctions Java method or EssListCalcFunctions C API function.

Notes

- To create a global or system-level function, use a single name for FUNC-NAME. For example, '@COVARIANCE'.
- To create a local or application-level function, use MaxL's double naming convention for FUNC-NAME. For example, Sample.'@COVARIANCE'. The second token must be enclosed in single quotation marks because it contains a special character.

Example

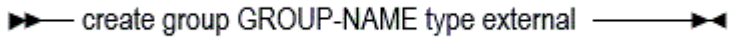
```
CREATE FUNCTION '@COVARIANCE'
AS 'com.hyperion.essbase.calculator.Statistics.covariance'
SPEC '@COVARIANCE (expList1, expList2)'
COMMENT 'computes covariance of two sequences given as expression lists';
```

Create Group

Create an Essbase security group.

This statement is supported for use in EPM Shared Services security mode only. You can only create groups using **type external** grammar, to provision groups that exist in EPM Shared Services.

Syntax



GROUP-NAME

Use **create group** to create a group in the following ways:

Keywords

create group
Create a security group to assign users to, so that they can share identical minimum permissions assigned at the group level.

type external
For use in EPM Shared Services security mode only. Create and provision in Essbase a group that already exists in EPM Shared Services.

Example

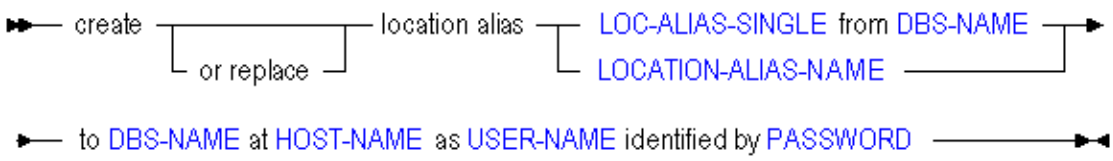
```
create group Level_1 type external;
```

Create Location Alias

The MaxL create location alias statement helps you create on the Essbase database a location alias referencing another cube.

Minimum permission required: Database Manager.

Syntax



- LOC-ALIAS-SINGLE
- LOCATION-ALIAS-NAME
- DBS-NAME
- HOST-NAME
- USER-NAME

- PASSWORD

Use **create location alias** to create a location alias in the following ways:

Keywords

create location alias
Create a location alias, identifying a remote host name, database, user name, and password. The location alias can be used by the @XREF function as an abbreviated login to a remote database.

create or replace location alias
Create a location alias, replacing any existing location alias of the same name on the same database.

...from <dbs-name>
Specify the name of the current database (the database on which the location alias is being created).

...to <dbs-name>
Specify the name of the remote database to log in to.

...at <host-name>
Specify where the remote database resides (using discovery URL).

...as <user-name> identified by <password>
Specify a user name and password with which to log in to the remote database.

Notes

- This statement requires the database to be started.
- Location aliases created using MaxL must be valid.
- Location aliases are used by the @XREF calculation function for cross-database calculations.

Example

```
create location alias EasternDB from Sample.Basic to East.Sales at "https://
192.0.2.1:443/essbase/agent" as adminuser identified by 'password';
```

Creates a location alias called EasternDB on Sample.Basic that represents the following login information:

- remote host = https://192.0.2.1:443/essbase/agent
- application = East
- database = Sales
- user name = adminuser
- password = password

Create Macro

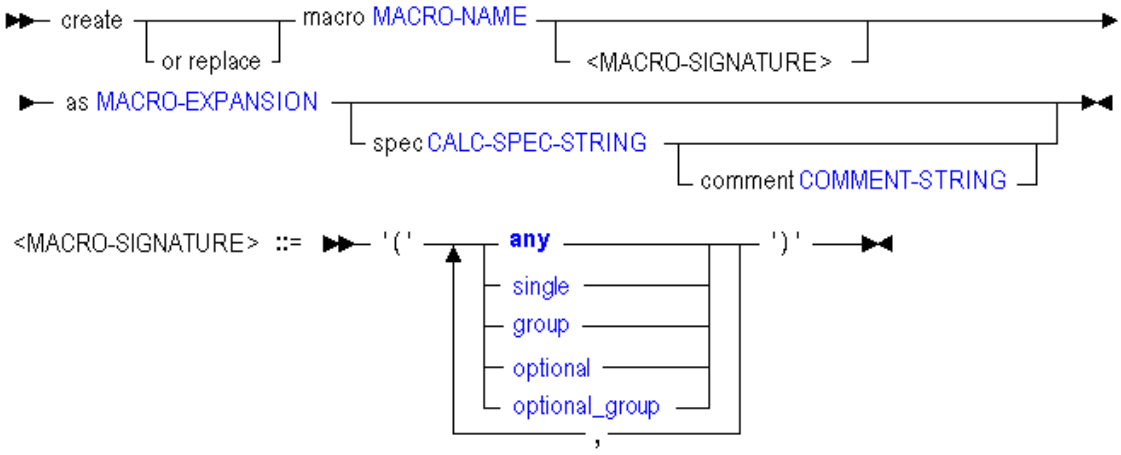
The MaxL create macro statement helps you create or re-create your own Essbase calculation macro, as your chosen combination of existing calculation functions or macros.

This statement registers the new macro with the Essbase custom-defined function and macro catalog.

Minimum permission required:

- Application Manager to create a local (application-level) macro.
- Administrator to create a global (system-level) macro.

Syntax



- MACRO-NAME
- MACRO-EXPANSION
- CALC-SPEC-STRING
- COMMENT-STRING
- MACRO-SIGNATURE

Use **create macro** to create a macro in the following ways:

Keywords

create macro as
Create and register with Essbase a custom-defined macro as your chosen combination of existing calculation functions or macros. Register the macro either as a global macro usable by the entire Essbase Server, or as a local macro available to an application. To register a global (server-wide) macro, use one token for MACRO-NAME. To register a local (application-wide) function, use two tokens.

create macro... <macro-signature>
Enter for the macro an optional signature defining the syntax rules for macro arguments. A macro signature describes the style in which arguments (or input parameters) to the macro may be passed. One example of a macro signature is (SINGLE, SINGLE, GROUP), meaning

that the macro must be passed two comma-separated arguments followed by a list of arguments. See Custom-Defined Macro Input Parameters.

create or replace macro
Register with Essbase a global or local custom-defined macro. If a macro with that name already exists in the custom-defined function and macro catalog, it is replaced.

spec
Enter for the macro an optional calculator-syntax specification string, as in the following example: `@MYMACRO (mbrName, rangeList)`. Use a specification string if you wish the macro to be returned by the output string of the IEssCube.getCalcFunctions Java method or EssListCalcFunctions C API function.

> **Note:**
>
> If you do not specify a calculation specification string, you cannot specify a comment either.

comment
Create a description of the macro (optional). You cannot create a comment without also using **spec** to create a calculator-syntax specification string. The optional calculator-syntax specification string and the comment are used as the output string of the IEssCube.getCalcFunctions Java method or EssListCalcFunctions C API function.

Notes

- To create a global (system-level) macro, use a single name for MACRO-NAME. For example, '@COVARIANCE'.
- To create a local (application-level) macro, use MaxL's double naming convention for MACRO-NAME. For example, Sample.'@COVARIANCE'.

Example

```
create macro Sample.'@COVARIANCE'(single, single) as
'@COUNT(SKIPMISSING,@RANGE(@@S))' spec '@COVARIANCE (expList1, expList2)'
comment 'Computes covariance of two sequences given as expression lists';
```

Create Partition

The MaxL create partition statement helps you create or validate a partition definition between two Essbase databases.

Permission required: Database Manager at both sites.

Select the type of partition to create:

- transparent
- replicated

To create a federated partition, do not use MaxL. Instead, see Integrate Essbase with Autonomous Database Using Federated Partitions.

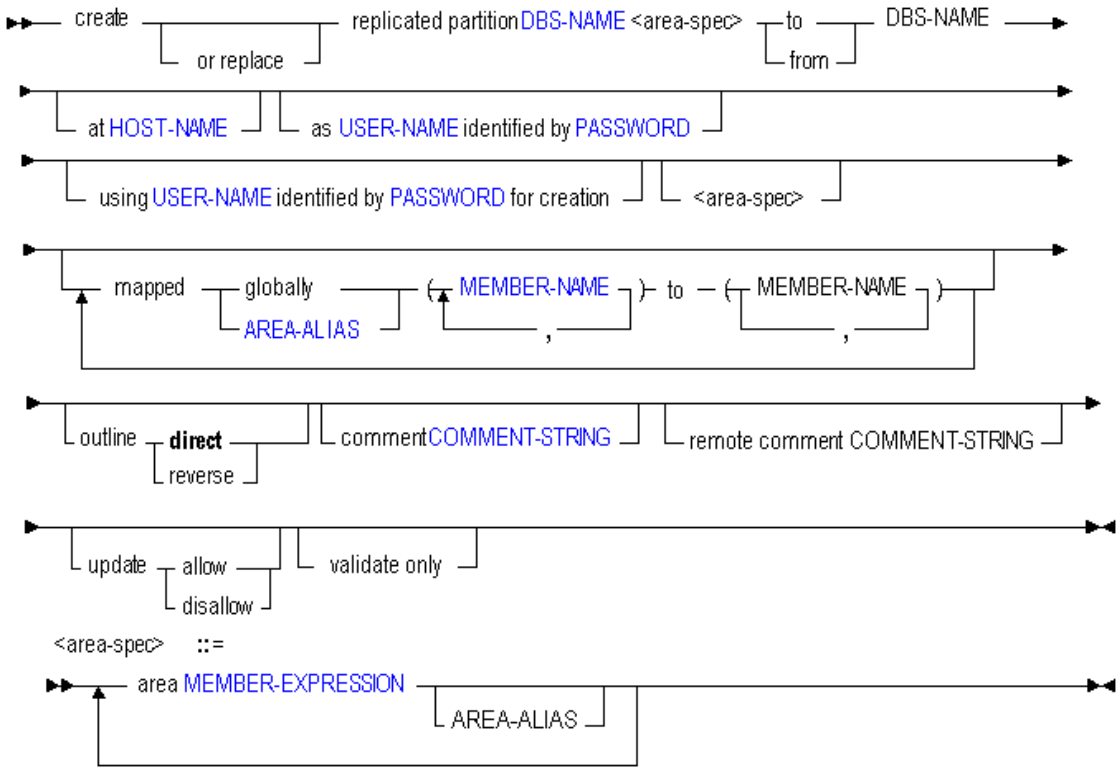
Partitions created using MaxL must be valid. To validate a partition, use the **validate only** clause.

Create Replicated Partition

The MaxL create replicated partition statement helps you create or validate a replicated partition between two Essbase databases.

A replicated partition copies a portion of the source (or originating) cube to be stored in a target cube. Users can access the target cube as if it were the source. The administrator must periodically refresh the target data from the source data.

Syntax



- DBS-NAME
- HOST-NAME
- USER-NAME
- PASSWORD
- AREA-ALIAS
- MEMBER-NAME
- COMMENT-STRING
- MEMBER-EXPRESSION

Use **create replicated partition** to create a partition in the following ways:

Keywords

create replicated partition
Create a replicated partition. A replicated partition is a copy of a portion of the data source that is stored in the data target.

create or replace ...partition
Create a partition definition, or replace an existing partition definition.

area...
Define the partition areas to share with the other cube. Optionally nickname the area using an area-alias .

to <dbs-name>
Create a partition definition between the current source cube and the second cube (the target).

from <dbs-name>
Create a partition definition between the current target cube and the second cube (the source).

at <host-name>
Specify the discovery URL of the remote cube.

as <user-name> identified by <password>
Provide the name and password of a default partition user who can connect to both cubes. Essbase uses the login information to:

- Transfer data between the source and the target for replicated and transparent partitions. Security filters can be applied to prevent end users from seeing privileged data.
- Synchronize outlines for all partition types.

using <user-name> identified by <password> for creation
Create the partition using a different user than the one being set as the default partition user. This can be useful when you want to specify a read-only user account as the default partition user.

mapped...
Define the member-name mapping for shared sections of both cubes, if member names for sections that map are different in the two cubes.

outline...
Specify the direction in which outline synchronization should proceed, if necessary. The default direction is the same as the data-refresh direction.

update...
Allow or disallow the updating of data in a replicated-type partition target. If you do not specify update allow, by default, the replicated partition cannot be updated.

comment
Create a comment to describe the source half of the partition definition.

remote comment
Create a comment to describe the target half of the partition definition.

validate only
Validate the existing partition definition described by this statement, without actually creating it.

Notes

- Multiple area specifications are allowed, provided they are separated by space. Multiple mappings are allowed, provided they are separated by space. All area aliases used in a mapping should be associated with the target, and the direction of the mapped clause should go from source to target.
- The first DBS-NAME is the local cube, and the second DBS-NAME is the remote cube.
- Creating a partition *to*the remote site means the current cube is the source. Creating a partition *from*the remote site means the current cube is the target.
- Aggregate storage cubes can be the target, but not the source, of a replicated partition.

Example

```
create or replace replicated partition source.source
area 'DimensionA' sourceAreaA
area 'DimensionB' sourceAreaB
to target.target at "https://myEssbase-myDomain.analytics.us2.example.com/
essbase/agent"
as admin identified by 'password'
area 'ParentMemberA' targetAreaA
area 'ParentMemberB' targetAreaB
mapped targetAreaA (ChildA) to (Child_a)
mapped targetAreaB (ChildB) to (Child_b)
;
```

Creates a partition from cube Source to cube Target where the partitioned areas between them are DimensionA and DimensionB on the source, corresponding to ParentMemberA and ParentMemberB (respectively) on the target. Differences in member names between the two partitioned areas are resolved during the partition creation, using the *mapped* clauses. Area aliases are used after each area specification, so that members can be mapped specifically for each area.

```
create or replace replicated partition sampeast.east
area '@IDESCENDANTS("Eastern Region"), @IDESCENDANTS(Qtr1)'
to samppart.company at "https://myEssbase-myDomain.analytics.us2.example.com/
essbase/agent"
as partitionuser identified by 'password'
area '@IDESCENDANTS(East) @IDESCENDANTS(Qtr1)'
update disallow;
```

Creates a replicated partition from an area in the source cube, sampeast.east, to an area in the target cube, samppart.company.

```
create or replace replicated partition sampeast.east
area '@IDESCENDANTS("Eastern Region"), @IDESCENDANTS(Qtr1)'
to samppart.company at "https://myEssbase-myDomain.analytics.us2.example.com/
```

```
essbase/agent"
as admin identified by 'password'
area '@IDESCENDANTS(East) @IDESCENDANTS(Qtr1)' foo
mapped foo (Year) to (Yr)
update allow validate only;
```

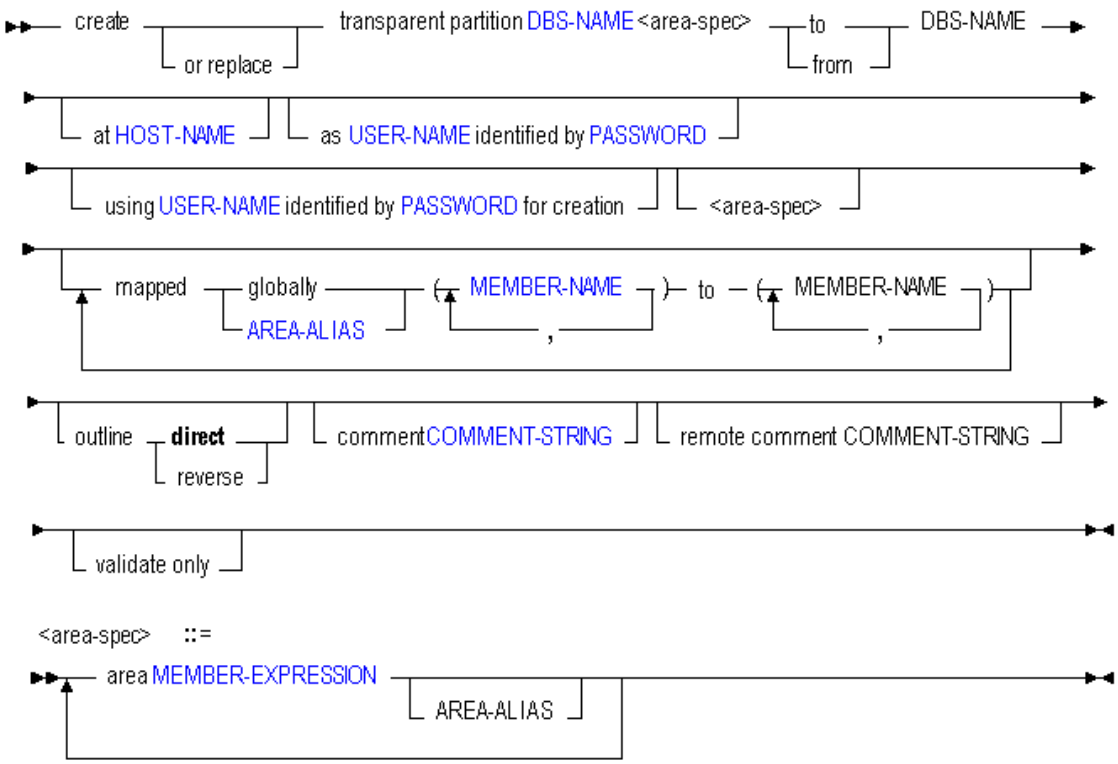
Validates the syntax of a replicated partition you might want to create. To create the partition after checking validity, simply remove the *validate only* phrase. For an explanation of *foo* as used above, see the definition for AREA-ALIAS .

Create Transparent Partition

The MaxL create transparent partition statement helps you create or validate a transparent partition between two Essbase databases.

A transparent partition allows users to manipulate data that is stored in a target cube as if it were part of the source cube. The remote data is retrieved from the data source each time that users at the data target request it.

Syntax



- DBS-NAME
- HOST-NAME
- USER-NAME
- PASSWORD
- AREA-ALIAS

- MEMBER-NAME
- COMMENT-STRING
- MEMBER-EXPRESSION

Use **create transparent partition** to create a partition in the following ways:

Keywords

create transparent partition
Create a transparent partition. A transparent partition enables users to access data from the data source as though it were stored in the data target. The data is, however, stored at the data source, which can be in another application, in another cube, or on another Essbase instance.

create or replace ...partition
Create a partition definition, or replace an existing partition definition.

area...
Define the partition areas to share with the other database. Optionally nickname the area using an area-alias.

to <dbs-name>
Create a partition definition between the current source cube and the second cube (the target).

from <dbs-name>
Create a partition definition between the current target cube and the second cube (the source).

at <host-name>
Specify the discovery URL of the remote cube.

as <user-name> identified by <password>
Provide the name and password of a default partition user who can connect to both cubes. Essbase uses the login information to:

- Transfer data between the source and the target for replicated and transparent partitions. Security filters can be applied to prevent end users from seeing privileged data.
- Synchronize outlines for all partition types.

using <user-name> identified by <password> for creation
Create the partition using a different user than the one being set as the default partition user. This can be useful when you want to specify a read-only user account as the default partition user.

mapped...
Define the member-name mapping for shared sections of both cubes, if member names for sections that map are different in the two cubes.

outline...
Specify the direction in which outline synchronization should proceed, if necessary. The default direction is the same as the data-refresh direction.

comment
Create a comment to describe the source half of the partition definition.

remote comment
Create a comment to describe the target half of the partition definition.

validate only
Validate the existing partition definition described by this statement, without actually creating it.

Notes

- Multiple area specifications are allowed, provided they are separated by whitespace. Multiple mappings are allowed, provided they are separated by whitespace. All area aliases used in a mapping should be associated with the target, and the direction of the mapped clause should go from source to target.
- The first DBS-NAME is the local cube, and the second DBS-NAME is the remote cube.
- Creating a partition *to* the remote site means the current cube is the source. Creating a partition *from* the remote site means the current cube is the target.
- Aggregate storage cubes can be the source, the target, or the source and target of a transparent partition. Outline synchronization (**refresh outline** statement) is not currently enabled for partitions that involve aggregate storage cubes.

Example

```
create or replace transparent partition sampeast.east
        area '@CHILDREN("Eastern Region"), @CHILDREN(Qtr1)' sourceArea
to samppart.company at "https://myEssbase-myDomain.analytics.us2.example.com/
essbase/agent"
as partitionuser identified by 'password'
        area '@CHILDREN(East) @CHILDREN(Qtr1)' targetArea;
```

Creates a transparent partition between the source, sampeast.east, and the target, samppart.company. The partition is defined only for the areas specified by the area aliases `sourceArea` and `targetArea`.

```
create or replace transparent partition source.source
        area 'DimensionA' sourceAreaA
        area 'DimensionB' sourceAreaB
to target.target at "https://myEssbase-myDomain.analytics.us2.example.com/
essbase/agent"
as smith identified by 'password'
        area 'ParentMemberA' targetAreaA
        area 'ParentMemberB' targetAreaB
        mapped targetAreaA (ChildA) to (Child_a)
        mapped targetAreaB (ChildB) to (Child_b)
        ;
```

Creates a partition from cube Source to cube Target where the partitioned areas between them are DimensionA and DimensionB on the source, corresponding to ParentMemberA and ParentMemberB (respectively) on the target. Differences in member names between the two partitioned areas are resolved during the partition creation, using the *mapped* clauses. Area aliases are used after each area specification, so that members can be mapped specifically for each area.

Create Trigger

The MaxL create trigger statement helps you create or replace a trigger to track state changes over a selected Essbase cube area.

Select the type of trigger to create:

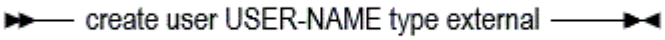
- on-update
- after-update

Create User

Create an Essbase user.

This statement is supported for use in EPM Shared Services security mode only. You can only create users using **type external** grammar, to provision users that exist in EPM Shared Services.

Syntax



USER-NAME

Use **create user** to create a user in the following ways:

Keywords

create user
Create a new Essbase user.

type external
Create a user that must log in using the Enterprise Performance Management System security platform. For the user to log in successfully, the AUTHENTICATIONMODULE parameter must be set to `CSS` in the `essbase.cfg` file, and the name must match a valid user name in the external authentication repository.

Example

```
create user 'Autumn Smith' type external;
```

Creates a user called Autumn Smith who is externally authenticated in a corporate authentication repository supported by the EPM Shared Services security platform.

Create After-Update Trigger

The MaxL create after update trigger statement helps you create or replace a trigger to track state changes over a selected Essbase cube area. The trigger is activated after a data update operation completes.

Triggers help you track whether designated constraints are violated during updates (events) in the area, and allow you to specify resultant actions to execute if violations are detected.

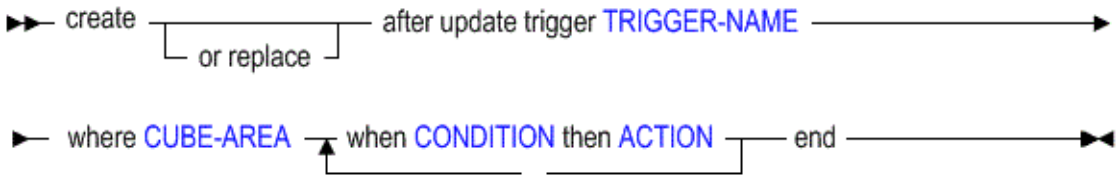
Minimum permission required: Database Manager.

Create an *after-update* trigger if you want the trigger to be activated after the entire data update operation is completed. This is the only type of trigger supported in aggregate storage mode. When after-update triggers are used, the trigger fires when an update operation on level-0 data cells is complete, and the update operation as a whole has met any condition specified for the cube area.

> **Note:**
>
> You cannot create or replace a trigger during a calculation, data update, or data load.

> **Note:**
>
> If a calculation assigns the same value to a given cell as was already present before the calculation, then triggers for that cell will not activate. In other words, if cell values are not changed, blocks are not marked as dirty, and triggers for those blocks are not activated, even if the trigger condition was otherwise met.

Syntax



- TRIGGER-NAME
- CUBE-AREA
- CONDITION
- ACTION

Use **create after update trigger** to create a trigger in the following ways:

Keywords

create after update trigger
Create a new after-update trigger.

create or replace after update trigger
Create an after-update trigger, or replace an existing trigger of the same name.

where <cube area>
Define the area of the database to be tracked. Use a valid, symmetric MDX slicer specification.

when <condition>
Define the condition to be tested for using the keyword WHEN followed by a valid MDX conditional expression.

then <action>
Define the action to be taken if the WHEN condition is met. See examples in Examples of Triggers.

end
The END keyword must terminate every create trigger statement.

Example

```
create or replace after update trigger Sample.Basic.EastColas
where (Jan, Sales, Actual, [100], East)
when Jan > 20 then spool EastColas_Fail end;
```

Logs a message in the EastColas_Fail file in the database directory.

Create On-Update Trigger

The MaxL create on update trigger statement helps you create or replace a trigger to track state changes over a selected Essbase cube area. The trigger is activated immediately when a cell is updated.

Triggers help you track whether designated constraints are violated during updates (events) in the area, and allow you to specify resultant actions to execute if violations are detected.

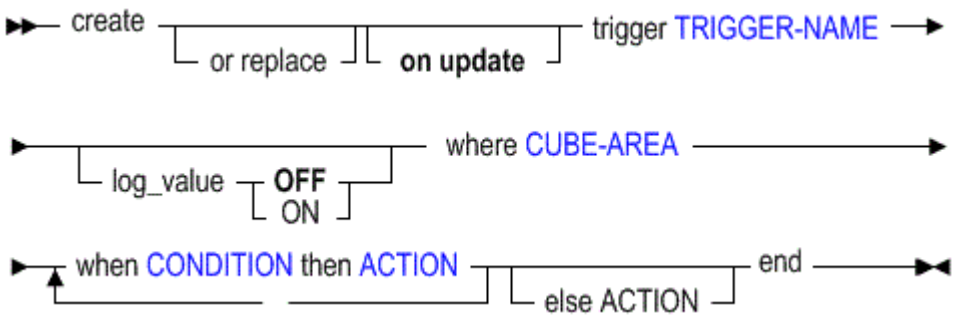
Minimum permission required: Database Manager.

An *on-update* trigger is the default type of trigger, even if no type is specified. During a data update process, any cell update that meets a condition specified for the cube area will immediately activate the trigger. On-update triggers are not supported in aggregate storage databases. If you are using an aggregate storage database, you can create after-update triggers.

> **Note:**
>
> If a calculation assigns the same value to a given cell as was already present before the calculation, then triggers for that cell will not activate. In other words, if cell values are not changed, blocks are not marked as dirty, and triggers for those blocks are not activated, even if the trigger condition was otherwise met.

> **Note:**
>
> You cannot create or replace a trigger during a calculation, data update, or data load.

Syntax



- TRIGGER-NAME
- CUBE-AREA
- CONDITION
- ACTION

Use **create on update trigger** to create a trigger in the following ways:

Keywords

create [on update] trigger
Create a new on-update trigger. The **on update** keywords are optional; an on-update trigger is created by default.

create or replace [on update] trigger
Create an on-update trigger, or replace an existing trigger of the same name.

log_value OFF
Optional. Log no data values to the trigger spool file. This is the default.

log_value ON
Optional. Log new and old data values to the trigger spool file.

where <cube area>
Define the area of the database to be tracked. Use a valid, symmetric MDX slicer specification.

when <condition>
Define the condition to be tested for using the keyword WHEN followed by a valid MDX conditional expression.

then <action>
Define the action to be taken if the WHEN condition is met. See examples in Examples of Triggers.

else <action>
Optional. Define an action to be taken if the WHEN condition is *not* met. See examples in Examples of Triggers.

end
The END keyword must terminate every create trigger statement.

Example

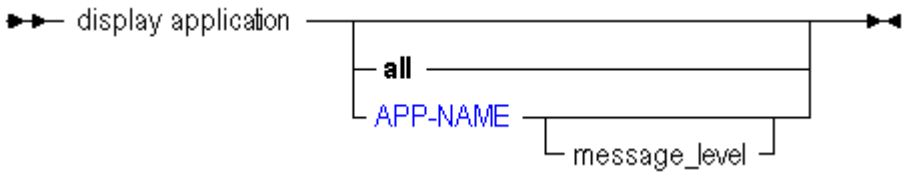
```
create or replace on update trigger Sample.Basic.EastColas
where (Jan, Sales, Actual, [100], East)
when Jan > 20 then spool EastColas_Fail end;
```

Logs a message in the EastColas_Fail file in the database directory.

Display Application

The MaxL display application statement helps you view information about application-wide Essbase settings.

Syntax



APP-NAME

Use **display application** to display application information in the following ways:

Keywords

all
Display all applications on the system.

<app-name>
Display the named application.

<app-name> message_level
Display the message-level settings for the named application.
Sample output:

```
component           message_level
+-------------------+-------------------+
Sample              info
```

Output Columns

application
String. Name of the application.

comment
String. Optional description of the application.

startup
`TRUE` or `FALSE`. Whether all users who have at least read permission can start the application.

autostartup
`TRUE` or `FALSE`. Whether the application starts when Essbase Server starts.

minimum permission
String. Minimum level of permission all users can have to databases in the application.

connects
`TRUE` or `FALSE`. Whether any user with a permission lower than Application Manager can make connections to the databases in this application which would require the databases to be started.

commands
`TRUE` or `FALSE`. Whether users with sufficient permissions can make read requests (or higher) to databases in the application.

updates
`TRUE` or `FALSE`. Whether users with sufficient permissions can make write requests (or higher) to databases in the application.

security
`TRUE` or `FALSE`. If FALSE, the Essbase security settings are disabled for the application, and all users are treated as Application Managers.

lock_timeout
Number. Maximum time interval (in seconds) that locks on data blocks can be held by clients.

max_lro_file_size
Number. If 0, there is no limit on the size of LRO attachments. All other sizes are displayed in kilobytes.

application_type
The type of encoding for the application.

```
0       Unspecified encoding type. The application was created using a pre-
Release 7.0 version of Essbase.
1       This value is not in use.
2       Non-Unicode-mode application
3       Unicode-mode application
```

application_locale
The language of the character set in use by the application.

server
The name of the computer hosting the Essbase Server.

application_status

```
0       Not Loaded
1       Loading
```

```
2       Loaded
3       Unloading
```

elapsed_time
How long the application has been loaded.

users_connected
The number of users currently connected to the application.

storage_type
The data storage type of the application.

```
0       Default data storage (same as 1)
1       Block storage (multidimensional)
4       Aggregate storage
```

number_of_databases
The number of databases in the application namespace.

Example

```
display application;
```

Displays information about all applications on the system.

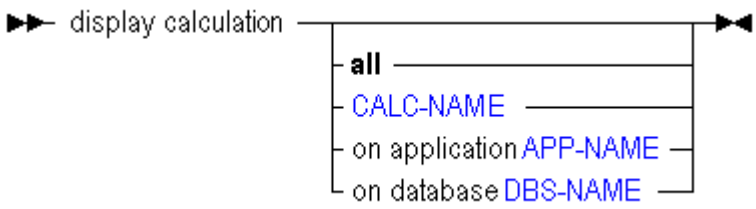
```
display application Sample;
```

Displays information about the Sample application.

Display Calculation

The MaxL display calculation statement helps you view information about stored Essbase calculations on the server, application, or cube.

Syntax



- CALC-NAME
- DBS-NAME
- APP-NAME

Use **display calculation** to display calculations in the following ways:

Keywords

all
Display all stored calculations on the system.

<calc-name>
Display the named calculation.

on application
Display all calculations on the specified application.

on database
Display all calculations on the specified database.

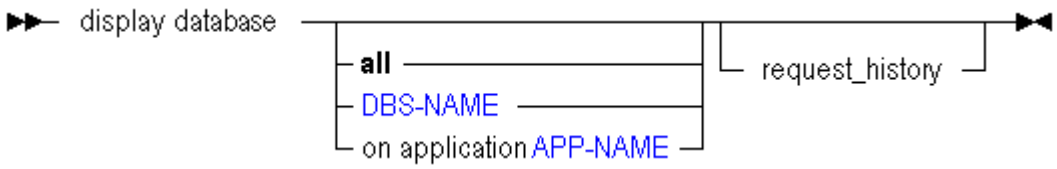
Example

```
display calculation;
```

Display Database

View information about Essbase database-wide state, settings, and recent request history.

Syntax



- DBS-NAME
- APP-NAME

Use **display database** to display database information in the following ways:

Keywords

all
Display information for all databases on the system.

<dbs-name>
Display information about the specified database.

on application
Display information about all databases on the specified application.

request_history
Display information about recent requests for the database. Information about the last three requests is returned.

Output Columns

application
Name of the application

database
Name of the database

comment
Text of the database comment, if present

startup
Whether the database is set to start when a user attempts retrievals against it

autostartup
Whether the database is set to start when the application starts

minimum permission
Minimum permission setting for the database.

aggregate_missing
Whether Essbase aggregates missing values during database calculations

two_pass_calc
Whether Two-Pass calculation is enabled

create_blocks
Whether create blocks on equations is enabled

data_cache_size
The size setting of the data cache for holding uncompressed data blocks

file_cache_size
The size setting of the file cache

index_cache_size
The size setting of the index cache, a buffer in memory that holds index pages

index_page_size
The size setting for the index page, a subdivision of an index file that contains index entries that point to data blocks. This setting is not changeable

cache_pinning
Whether cache memory locking is enabled (no longer supported)

compression
Compression type. Field values are numeric, and translate as follows:

```
1               Run-length encoding
2               Bitmap
3               (no longer supported)
```

retrieve_buffer_size
The size of the retrieval buffer, used to process and optimize retrievals from grid clients

retrieve_sort_buffer_size
The size of the retrieval sort buffer, used to hold data to be sorted during retrievals

io_access_mode
The current I/O access mode. Only buffered I/O is supported.

pending_io_access_mode
Values are numeric, and translate as follows:

```
0               Invalid / Error
1               Buffered
2               Direct /* no longer supported
```

no_wait
Whether Essbase is set to wait to acquire a lock on data blocks that are locked by another transaction

committed_mode
Whether Essbase is set to enable transactions to hold read/write locks on all data blocks involved with a transaction until the transaction completes and commits

pre_image_access
Whether Essbase is set to allow users read-only access to data blocks that are locked for the duration of another concurrent transaction

lock_timeout
The maximum number of minutes that data blocks can be locked by users

commit_blocks
The number of data blocks updated before Essbase performs a commit (The default is 3000)

commit_rows
The number of rows of a data file processed during a data load before Essbase performs a commit (The default is 0)

currency_database
Name of a linked currency database, if one exists

currency_member
The member to use as a default value in currency conversions

currency_conversion
The method of currency conversion.
Values are numeric, and translate as follows:

```
1               division
2               multiplication
```

note
Annotation accessible from the login dialog box

db_type
Database type. Values are numeric, and translate as follows:

```
0               Normal
1               Currency /* no longer supported
```

read_only_mode
Values are numeric, and translate as follows:

```
0               Not read only
1               Read only
```

db_status
Running status of the database. Values are numeric, and translate as follows:

```
0               Not Loaded
1               Loading
2               Loaded
3               Unloading
```

elapsed_time
How long the database has been running, in hours:minutes:seconds

users_connected
Number of connected users

blocks_locked
How many data blocks are locked

number_dimensions
Number of dimensions

number_disk_volume
Number of disk volumes

data_status
Values are numeric, and translate as follows:

```
0               No Data
1               Data Loaded without Calculation
2               Data is Calculated
```

current_data_cache
Current size of the data cache

current_file_cache
Current size of the file cache

current_index_cache
Current size of the index cache

current_index_page
Current size of the index page

currency_country_dim
For currency databases, the country dimension

currency_time_dim
For currency databases, the time dimension

currency_category_dim
For currency databases, the accounts dimension where currency categories are defined

currency_type_dim
For currency databases, the currency type dimension, which contains members that identify various currency scenarios

request_type_n / request_user_n / request_start_n / request_end_n
If you use the **request_history** keyword, information about the last three requests is returned under columns *request_type_n*, *request_user_n*, *request_start_n*, and *request_end_n*, where *n* is 1, 2, and 3. The *request_user* fields return the names of the users who made the requests. The *request_start* and *request_end* fields return the date and time of the requests. *request_type* field values are numeric, and translate as follows:

```
0               Data Load
1               Calculation
2               Outline Update
                Unknown
```

Example

```
display database;
```

Displays information about all databases on the system.

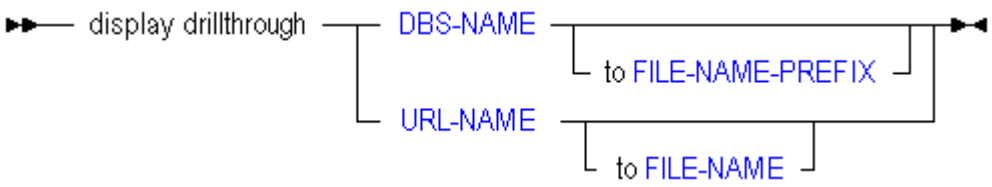
```
display database Sample.Basic;
```

Displays information about the Sample.Basic database.

Display Drillthrough

The MaxL display drillthrough statement helps you view drill-through URL definitions used to link Essbase to content hosted on Oracle ERP and EPM applications.

Syntax



- DBS-NAME

- FILE-NAME-PREFIX
- URL-NAME
- FILE-NAME

Use **display drillthrough** to display URL information in the following ways:

Keywords

<dbs-name>
Display all drill-through URL definitions on the database.
The number of drill-through URLs per database is limited to 255.

<dbs-name> to <file-name-prefix>
Display all drill-through URL definitions on the database, writing the URL XML content to file names prefixed with the string given as input for FILE-NAME-PREFIX.

<url-name>
Display the specified drill-through URL definition.
The number of drillable regions in a drill-through URL is limited to 256. The number of characters per drillable region is limited to 65536.

<url-name> to <file-name>
Display the specified drill-through URL definition, writing the URL XML content to the specified file name.

Example

```
display drillthrough sample.basic;
```

Displays all drill-through URL definitions on Sample.Basic.

```
display drillthrough sample.basic to "urlxmls";
```

Displays all drill-through URL definitions on Sample.Basic, writing the URL XML content to file names prefixed with `urlxmls`.

```
display drillthrough sample.basic."Drill through To EPMI";
```

Displays the drill-through URL definition named `Drill through To EPMI`.

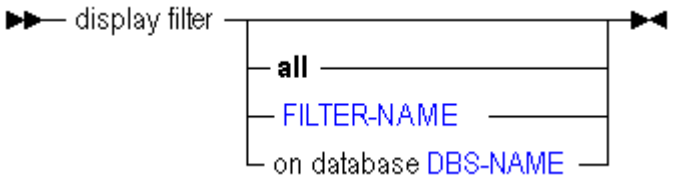
```
display drillthrough sample.basic."Drill through To EPMI" to "c:/temp/
drillthrough.xml";
```

Displays the drill-through URL definition named `Drill through To EPMI`, writing the URL XML content to the file `drillthrough.xml`.

Display Filter

The MaxL display filter statement helps you view a specific Essbase security filter or a list of all filters.

Syntax



- FILTER-NAME
- DBS-NAME

Use **display filter** to display filters in the following ways. Use display filter row to display the contents of filters.

Keywords

all
Display all filters on the system.

<filter-name>
Display a filter by name.

on database
Display all filters associated with the specified database.

Example

```
display filter;
```

Displays the names of all filters on the system.

Display Filter Row

The MaxL display filter row statement helps you view the rows in security filters restricting Essbase database access.

Syntax

- FILTER-NAME
- DBS-NAME

You can display filter contents in the following ways using **display filter row**.

Keywords

all
Display all filters (and their contents) defined on the system.

<filter-name>
Display a filter and its contents by name.

on database
Display all filters (and their contents) associated with the specified database.

Example

```
display filter row sample.basic.filt2;
```

Displays the row-by-row definition of a filter named filt2 which is associated with Sample.Basic.

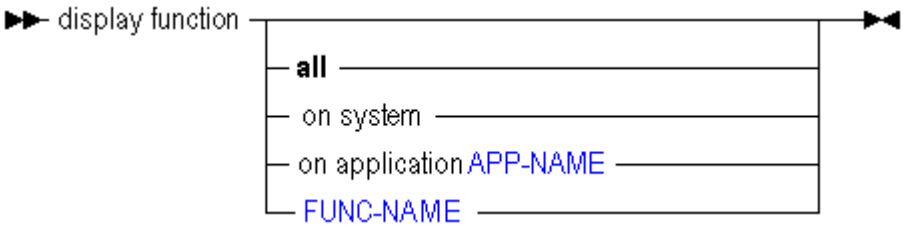
Display Function

The MaxL display function statement helps you view a list of custom-defined Essbase calculation functions.

Using this statement, view a list of custom-defined functions available globally or to an application. If MaxL shows no application name next to a function in the display output, then that function is global (system-wide). This statement also returns the validation status of an application's local custom-defined function or functions.

Minimum permission required: Read.

Syntax



- APP-NAME
- FUNC-NAME

Use **display function** to display custom-defined functions in the following ways:

Keywords

all
Display all custom-defined functions, including those registered on the application level (local) or on the system level (global).

on system
Display all custom-defined functions registered on the system (global). Does not include locally defined functions.

on application
Display all custom-defined functions registered with the specified application (local). Does not include globally defined functions.

<func-name>
Display a custom-defined function by name.

Output Columns

The columns returned for this statement are described as follows:

application
Application name(s).

function
Registered custom-defined function name(s), as defined by FUNC-NAME in the create function statement.

class
The java class before the method, as defined by JAVACLASS.METHOD in the create function statement.

method
The java method (at the end of the class), as defined by JAVACLASS.METHOD in the create function statement.

spec
Optional Essbase calculator-syntax specification string, as defined by CALC-SPEC-STRING in the create function statement.

comment
String as defined by COMMENT-STRING in the create function statement.

runtime
Values: TRUE or FALSE. Whether or not the custom-defined function was created with the **runtime** property.

state
The current state of the registered custom-defined function.
Values:

- 0 = UNKNOWN. It is unknown whether the function is valid Java and is loaded into any application process.
- 1 = NOT_LOADED. The function is not loaded into any application process. You may have to refresh or restart the application in order to use this function. Or, the function may not be developed validly in Java.

- 2 = LOADED.

  The function is valid Java, and is loaded into at least one application process.
- 3 = OVERRIDDEN. The local (application) function is overridden by a global (system-wide) function of the same name.

Example

```
display function on application sample;
```

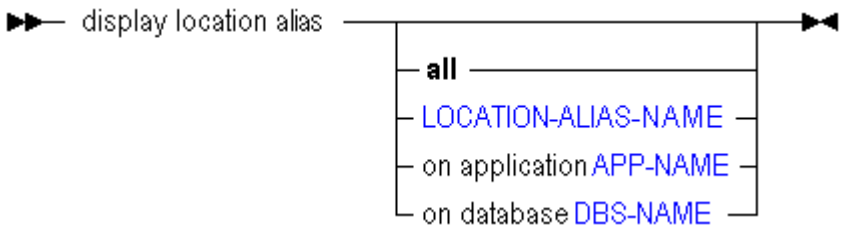
Displays all custom-defined functions associated with the application Sample.

Display Location Alias

The MaxL display location alias statement helps you view one or more defined Essbase location aliases used to reference other cubes.

Using this statement, you can view a specific location alias or a list of all location aliases defined on the system.

Syntax



- LOCATION-ALIAS-NAME
- APP-NAME
- DBS-NAME

You can display location aliases in the following ways using **display location alias**.

Keywords

all
Display all location aliases defined on the system.

<location-alias-name>
Display a location alias by name.

on application
Display all location aliases defined for the specified application.

on database
Display all location aliases defined for the specified database.

Example

```
display location alias all;
```

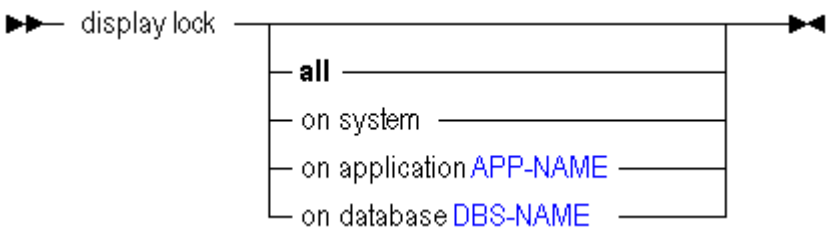
Displays a list of location aliases defined on the system.

Display Lock

The MaxL display lock statement helps you view information about current locks held by users or processes against Essbase data blocks.

> **Note:**
>
> Data locks do not apply to aggregate storage applications.

Syntax



- APP-NAME
- DBS-NAME

You can display locks in the following ways using **display lock**.

Keywords

all
Display all locks on the specified scope. If **all** is omitted, this is the default.

on system
Display all locks on the system.

on application
Display all locks associated with the specified application.

on database
Display all locks associated with the specified database.

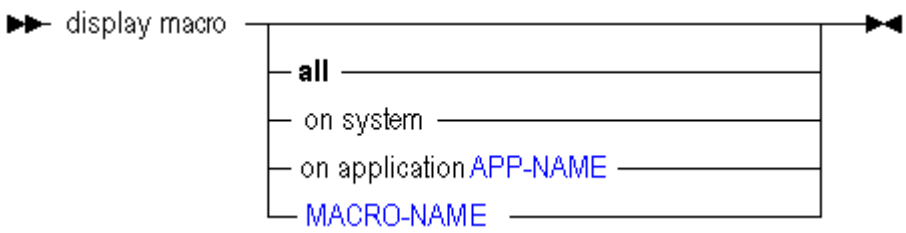
Display Macro

The MaxL display macro statement helps you view a list of custom Essbase calculation macros.

Use this statement to view a list of custom-defined macros available globally or to an application. If MaxL shows no application name next to a macro in the display output, then that macro is global (system-wide).

Minimum permission required: Read.

Syntax



- APP-NAME
- MACRO-NAME

You can display custom-defined macros in the following ways using **display macro**.

Keywords

all
Display all custom-defined macros, including those registered on the application level (local) or on the system level (global).

on system
Display all custom-defined macros registered on the system (global). Does not include locally defined macros.

on application
Display all custom-defined macros registered with the specified application (local). Does not include globally defined macros.

<macro-name>
Display a custom-defined macro by name.

Output Columns

The columns returned for this statement are described as follows:

application
Application name(s).

macro
Macro name(s), as defined by MACRO-NAME in the create macro statement.

signature
Macro signature, as defined by the custom-defined macro input parameters in the create macro statement.

expansion
Macro expansion, as defined by MACRO-EXPANSION in the create macro statement.

spec
Optional Essbase calculator-syntax specification string, as defined by CALC-SPEC-STRING in the create macro statement.

comment
String as defined by COMMENT-STRING in the create macro statement.

state
The current state of the registered custom-defined macro.
Values:

- 0 = UNKNOWN. It is unknown whether the macro is loaded into any application process.
- 1 = NOT_LOADED. The macro is not loaded into any application process. You may have to refresh or restart the application in order to use this macro.
- 2 = LOADED.

  The macro is loaded into at least one application process.
- 3 = OVERRIDDEN. The local (application) macro is overridden by a global (system-wide) macro of the same name.

Example

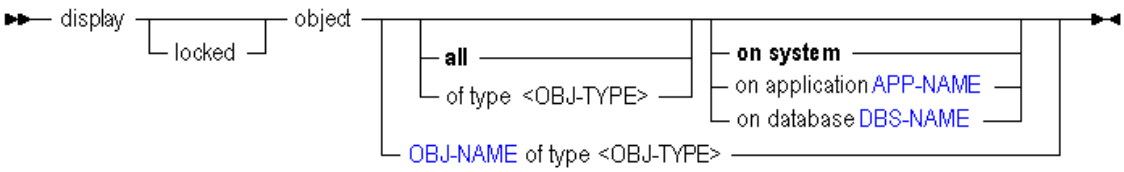
```
display macro on application sample;
```

Displays all custom-defined macros associated with the application Sample.

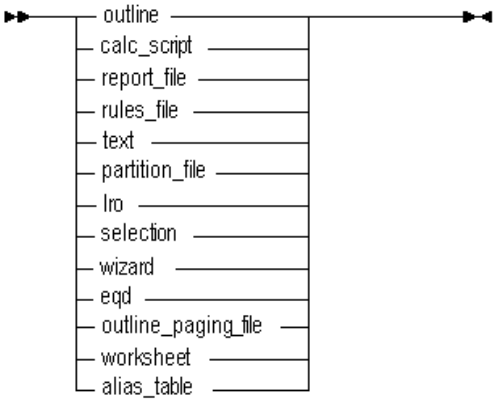
Display Object

The MaxL display object statement helps you view one or more Essbase database-related file objects stored in cube directories.

Syntax



<OBJ-TYPE> ::=



- APP-NAME
- DBS-NAME
- OBJ-NAME

You can display objects in the following ways using **display object**.

Keywords

all
Display all stored objects on the specified scope.

locked
Display only locked objects on the specified scope.

of type...
Display only the objects of type specified by `OBJ-TYPE ::=`.

OBJ-NAME of OBJ-TYPE
Display a specific object by name and type.

on system
Display all stored objects on the system.

on application
Display all objects associated with the specified application.

on database
Display all objects associated with the specified database.

Example

```
MAXL> display object sample.basic.Calcdat of type text;

 applicati database  object_na object_ty locked      locked_by   locked_time
```

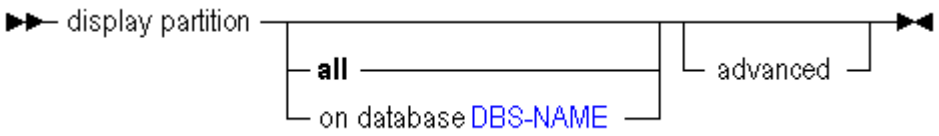
```
+---------+---------+---------+---------+-----------+-----------+-----------
 Sample     Basic      Calcdat           9       FALSE N/A          N/A
```

Display Partition

The MaxL display partition statement helps you view information about Essbase partitioned databases.

Use this statement to view information about a specific partitioned database or all partitioned databases on the server. This statement only displays partition information for applications which are currently started.

Syntax



DBS-NAME

You can display partition information in the following ways using **display partition**.

Keywords

all
Display all partitions defined on the system.

on database
Display all partitions associated with the specified database.

advanced
Display full information including areas and member mappings for local and remote pieces of partitions.

Notes

If a partition definition is invalid, the same partition may be displayed twice, one time for each half. Each half will show the connection information of the other half.

Example

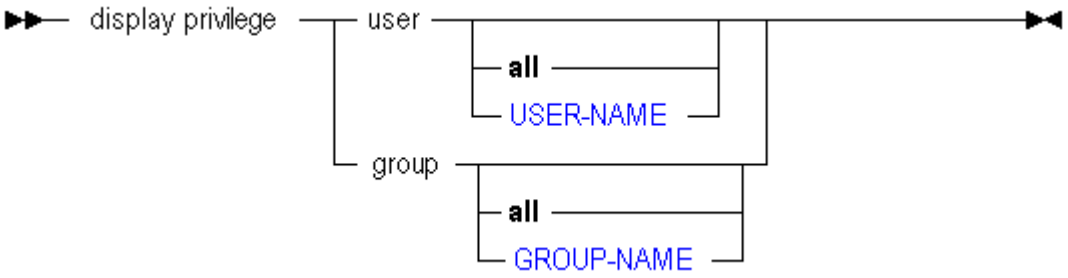
```
display partition all;
```

Displays information about all partitioned databases defined on the system.

Display Privilege

The MaxL display privilege statement helps you view Essbase assigned privileges, calculations, and filters held by users and groups.

Syntax



- USER-NAME
- GROUP-NAME

You can display security permissions in the following ways using **display privilege**.

Keywords

user...
Display security permissions for all users, or for a specified user.

group...
Display security permissions for all groups, or for a specified group.

The values returned for the *type* field are numeric, and translate as follows:

Table 3-2 Output Columns

Column	Description
1	System-Level System Privileges
2	System-Level System Roles
3	Execute calculation
4	Filter

Example

```
display privilege user Fiona;
```

Displays the privileges user Fiona has on each database object, including any calculations or filters granted to Fiona.

```
display privilege group;
```

Displays privileges held by all groups on the system to all applications and databases on the system.

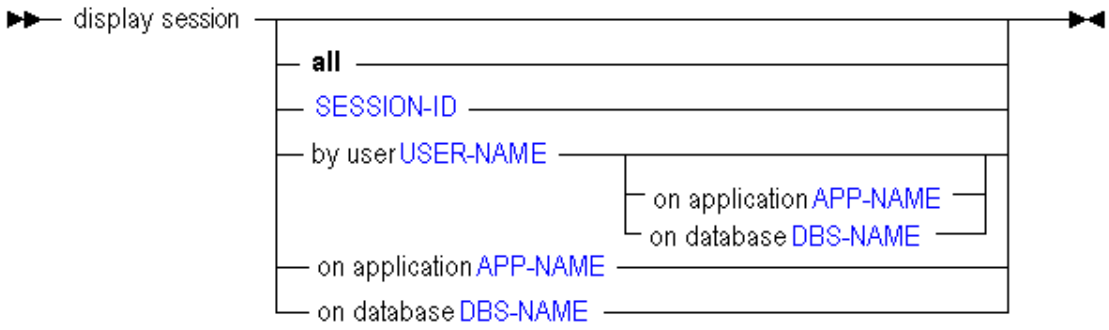
Display Session

The MaxL display session statement helps you view active login sessions on the current Essbase server, application, or database.

The information this statement displays about active login sessions includes:

- The user that owns each session
- A session ID for each session
- How long the sessions have been active
- Information about outstanding requests (description, time started, name of computer originating the request, and status).

Syntax



- APP-NAME
- DBS-NAME
- USER-NAME
- SESSION-ID

You can display login and request information in the following ways using **display session**.

Keywords

all
Display information about all current user sessions and active requests.

<session-id>
Display information about a particular user session, indicated by the numeric session ID.

by user
Display information about all current sessions by a particular user.

by user on application
Display information about all current sessions by a particular user on the specified application.

by user on database
Display information about all current sessions by a particular user on the specified database.

on application
Display information about all current sessions on the specified application.

on database
Display information about all current sessions on the specified database.

Table 3-3 Display Session: Output Columns

Column	Description	Example
user	Logged in user name	`powerusr`
session	Numeric session id	`865075202`
login_time	Number of seconds ago the session began	`192`
application	Name of active application	`Sample`
database	Name of active database	`Basic`
db_connect_time	Number of seconds ago the database was set active	`11879`
request	Type of active request in progress; for example, calculation, data load, or restructure. This information can help you get details about what is occurring during lengthy sessions.	`BuildDimXml : Index Only`
request_time	Number of milliseconds the active request has been running	`1503869494621`
connection_source	Host name of the connected service	`example.com`
connection_ip	IP address of the connected service	`192.0.2.123`
request_state	The status of the active request	`in_progress`

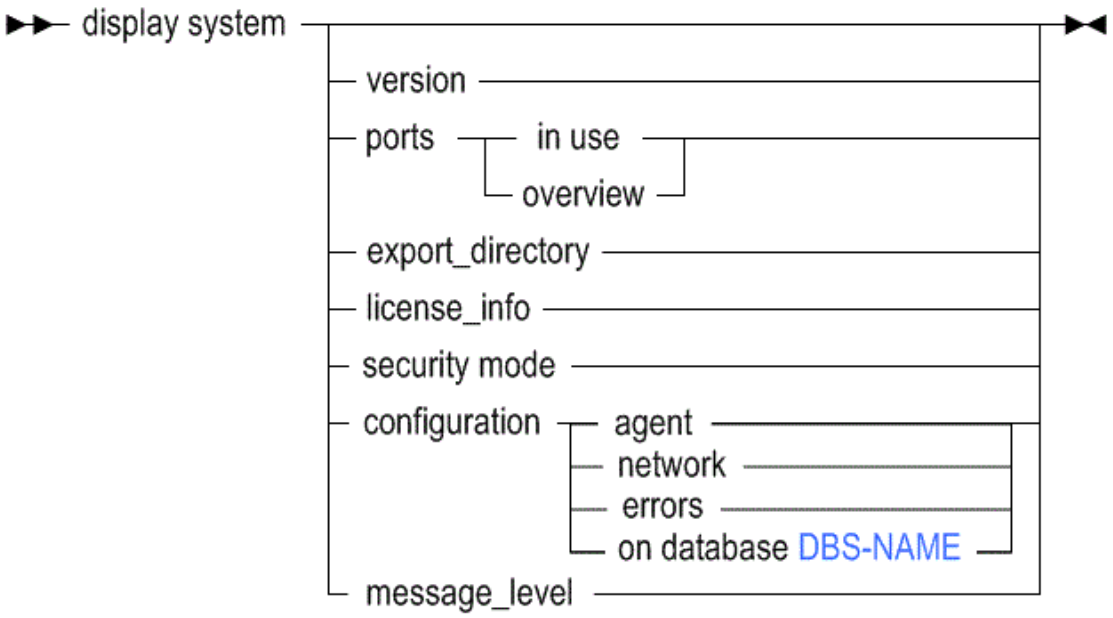
Example

```
display session;


display session on database sample.basic;
```

Display System

The MaxL display system statement helps you view information about current server-wide Essbase settings.

Syntax



DBS-NAME

You can display server-wide information in the following ways using **display system**.

Keywords

display system
Display current connections and system-wide settings.
configuration field values are numeric, and translate as follows:

```
1  Non-Unicode mode
2  Unicode mode
```

display system version
Display the server software version number.

display system ports in use
Display information about ports currently in use on the system.

display system ports overview
Display the number of ports that are available and in use on the system.

display system export_directory
Display names of directories created for linked-reporting objects exported from a database to a directory created in the application directory.
If you used **export lro** and gave a full path to a directory for export files, those directories are not listed. Only export directories created in the application directory using the following **export lro** method are listed:
`export database DBS-NAME lro to <server or local> directory DBS-EXPORT-DIR;`
where DBS-EXPORT-DIR is a suffix (for example, `dir1`) for the name of a directory created by MaxL in the application directory. MaxL creates the directory with a prefix of `appname-`

`dbsname-`. For example, **display system export_directory** would list the following directories existing under the application directory:

```
sample-basic-dir1


sample-basic-dir2
```

but it would not list export directories created elsewhere by providing a full directory path when using the **export lro** statement, such as:`c:\MyExports\MyExportDir`

display system license_info
Display information about the license settings implemented on the system.

display system security mode
The type of security in use: native or OPSS mode.
security_mode field values are numeric, and translate as follows:

```
1  Native Essbase security (no longer supported)
2  OPSS security
```

display system configuration agent
Display current Essbase Agent configuration properties.
Permission required: Administrator.

display system configuration network
Display current Essbase configuration properties applicable to the network.
Permission required: Administrator.

display system configuration errors
Display Essbase configuration properties that contain errors: an error is any line entry that is not a comment *and* results in nothing being set.
Permission required: Administrator.

display system configuration on database DBS-NAME
Display Essbase configuration properties applicable to the named database.
Permission required: Administrator.

message_level
Display the values that are set for the system message level.
Sample output:

```
component           message_level
+-------------------+-------------------+
system              info
```

Example

```
display system;
```

Displays current password and session management settings.

```
display system configuration agent;
```

Displays current Essbase configuration properties applicable to the Essbase Agent.

Sample Outputs for Display System Configuration

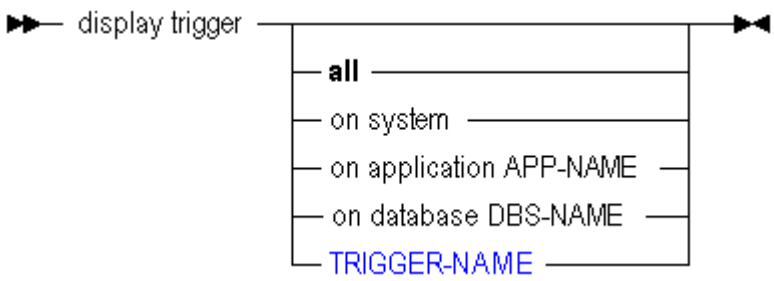
```
MAXL> set column_width 40;

MAXL> display system configuration agent;
 KEYWORDS                          SETTINGS
+---------------------------------+----------------
 AGENTTHREADS                     50
 MAXLOGINS                        100000
 PORTUSAGELOGINTERVAL             600

 OK/INFO - 1241044 - Records returned: [3].
MAXL> display system configuration network;

 KEYWORDS                                SETTINGS
+---------------------------------------
+---------------------------------------
 NETDELAY                                1500
 NETRETRYCOUNT                           2000

 OK/INFO - 1241044 - Records returned: [2].

MAXL> display system configuration on database democfg.basic;

 KEYWORDS                                SETTINGS
+---------------------------------------
+---------------------------------------
 CALCCACHE                               TRUE
 CALCCACHEDEFAULT                        1250000
 CALCCACHEHIGH                           1750000
 CALCCACHELOW                            40000
 DLSINGLETHREADPERSTAGE                  FALSE
 DLTHREADSPREPARE                        4
 DLTHREADSWRITE                          4
 DYNCALCCACHEMAXSIZE                     DB[41943040], SV[41943040]
 SSPROCROWLIMIT                          250000

 OK/INFO - 1241044 - Records returned: [9].
```

Display Trigger

The MaxL display trigger statement helps you view details about triggers that track changes to selected Essbase cube areas.

> **Note:**
>
> The application containing the trigger must be started in order to use this statement.

Syntax



APP-NAME

Table 3-4 Output Columns

Column	Description
application	The name of the application that contains the database.
database	The name of the database that contains the trigger. Essbase lists only databases that contain triggers.
name	The name of the trigger.
definition	The MaxL trigger statement (for example, create or replace trigger)
enabled	Whether Essbase is set to monitor the trigger. Values: TRUE or FALSE. To change the value, use **alter trigger**.

Example

```
display trigger on database Sample.Basic;
```

This example displays the output columns:

Table 3-5 Display Trigger MaxL Output

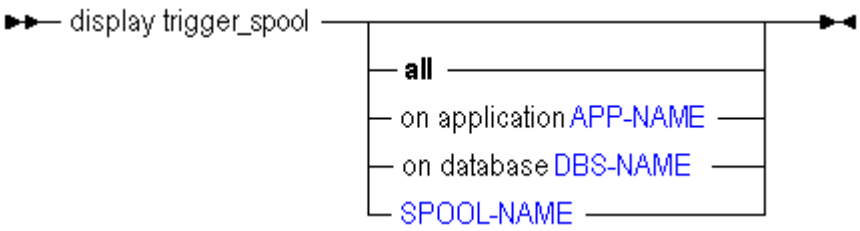
application	database	name	definition	enabled
Sample	Basic	WatchCosts	create or replace trigger	TRUE

Display Trigger Spool

The MaxL display trigger spool statement helps you view log files generated by triggers that track changes to selected Essbase cube areas.

For more information about triggers, see Examples of Triggers.

Syntax

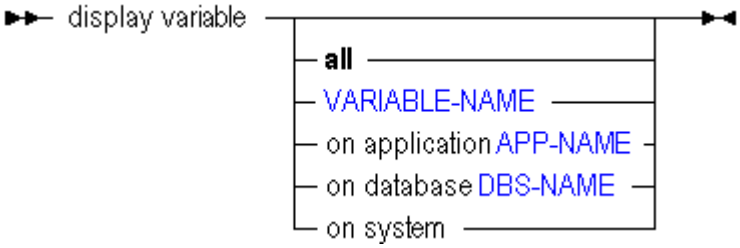


- APP-NAME
- DBS-NAME
- SPOOL-NAME

Display Variable

The MaxL display variable statement helps you view a list of Essbase substitution variables defined on the server.

Syntax



- VARIABLE-NAME
- APP-NAME
- DBS-NAME

You can display substitution variables in the following ways using **display variable**.

Keywords

all
Display all substitution variables defined on the Essbase Server, including those associated with applications and databases.

<variable-name>
Display a substitution variable by name.
Permission required:

- Read access for the applicable database or application.
- Administrator for system-defined variables.

on application
Display only substitution variables defined on the specified application.
Permission required: Read access for the application.

on database
Display only substitution variables defined on the specified database.
Permission required: Read access for the database.

on system
Display only the substitution variables associated with the Essbase Server.
Permission required: Administrator.

Notes

To manage substitution variables, use alter database (containing add, drop, and set variable).

Example

```
display variable;
```

Displays a list of all substitution variables on the Essbase Server.

Drop Application

The MaxL drop application statement helps you delete an application from the Essbase server.

To remove an application with databases, use **cascade**. To remove an application that has locked objects in a constituent database, you can use **force**.

Minimum permission required: Application Manager.

Syntax

APP-NAME

You can delete applications in the following ways using **drop application**.

Keywords

cascade
Delete an application along with its constituent databases.

force
Delete an application that may have locked objects in a constituent database.

Drop Calculation

The MaxL drop calculation statement helps you delete a stored calculation from an Essbase database.

Minimum permission required: Database Manager.

Syntax

You can delete calculations using **drop calculation**.

CALC-NAME

Keywords

drop calculation <calc-name>
Delete the specified calculation.

Example

```
drop calculation Sample.basic.calcname;
```

Deletes a calculation from Sample.basic.

Drop Database

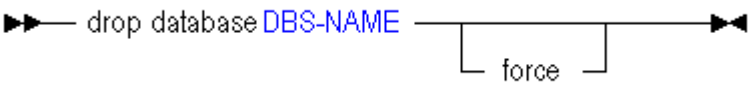
The MaxL drop database statement helps you delete an Essbase database.

If the database has outstanding locks, clear them first, or use **force** to drop with locks.

Minimum permission required: Database Manager.

Syntax

You can delete databases using **drop database**.



DBS-NAME

Keywords

force
Delete a database that may have locked objects.

Example

```
drop database Sample.Basic force;
```

Deletes the database Sample.Basic, even if client users have outstanding locks on Sample.Basic.

Drop Drillthrough

The MaxL drop drillthrough statement helps you delete a drill-through URL definition used to link Essbase to content hosted on Oracle ERP and EPM applications.

Syntax

URL-NAME

Example

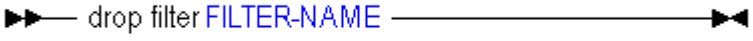
```
drop drillthrough sample.basic.myURL;
```

Drop Filter

The MaxL drop filter statement helps you delete a security filter from an Essbase database.

Minimum permission required: Database Manager.

Syntax



FILTER-NAME

You can delete filters using **drop filter**.

Keywords

drop filter <filter-name>
Delete a filter by name.

Example

```
drop filter sample.basic.filter1;
```

Deletes the filter called filter1 from the sample.basic database.

Drop Function

The MaxL drop function statement helps you delete a custom-defined Essbase calculation function from the server or from an application.

Minimum permission required:

- Application Manager to drop a local (application-level) function.
- Administrator to drop a global (system-level) function.

Syntax

FUNC-NAME

You can delete custom-defined functions using **drop function**.

Keywords

drop function <func-name>
Delete a custom-defined function by name.

Notes

If you drop a custom-defined function after having associated it with an application (using refresh custom definitions), you may have to stop and restart the application for the drop to take effect.

Example

```
drop function sample.'@COVARIANCE';
```

Deletes the function called @COVARIANCE from the Sample application.

Drop Group

When user authentication is managed either through EPM Shared Services or an external LDAP identity provider, you can use the MaxL drop group statement if you need to clean up inactive groups from Essbase after they have been removed or renamed on the external provider.

This MaxL statement is no longer supported for any other use than the one stated above.

Syntax

GROUP-NAME

You can clean up security groups from Essbase using drop group.

Keywords

drop group <group-name>
Delete a group from Essbase. This action does not de-provision the group from the external identity provider.

Example

```
drop group big_group;
```

Deletes the group called big_group from Essbase.

Drop Location Alias

The MaxL drop location alias statement helps you delete a location alias defined on an Essbase database.

Location aliases are used to reference another Essbase database.

Minimum permission required: Database Manager.

Syntax

LOCATION-ALIAS-NAME

You can delete location aliases using **drop location alias**.

Keywords

drop location alias <location-alias-name>
Delete a location-alias definition.

Example

```
drop location alias Main.Sales.EasternDB;
```

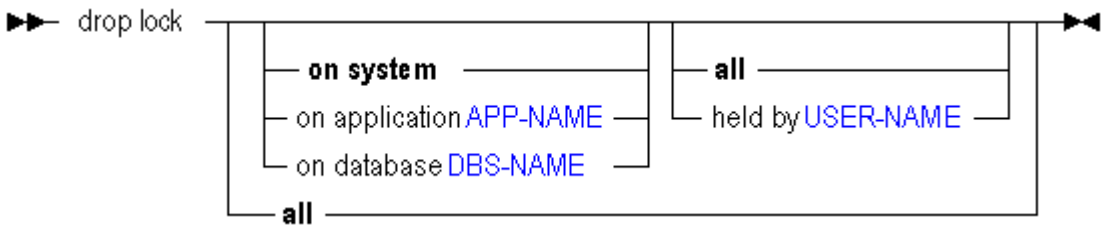
Drops the location alias called EasternDB in the Main.Sales database.

Drop Lock

The MaxL drop lock statement helps you remove a lock acquired through a grid client operation against an Essbase block storage database.

> **Note:**
>
> Data locks do not apply to aggregate storage applications.

Syntax



- APP-NAME
- USER-NAME
- DBS-NAME

Keywords

drop lock on system all
Drops all locks by all users, for all databases on the system.

drop lock all
Same as "drop lock on system all"

drop lock on system
Same as "drop lock on system all"

drop lock
Same as "drop lock on system all"

drop lock on application APP-NAME
Drops all locks on the application, for all users.

drop lock on application APP-NAME held by USER-NAME
Drops locks on the application which are held by a specific user.

drop lock on database DBS-NAME
Drops all locks on the database, for all users.

drop lock on database DBS-NAME held by USER-NAME
Drops locks on the database which are held by a specific user.

drop lock held by USER-NAME
Drops all locks held by a specific user, on any application or database.

Drop Macro

The MaxL drop macro statement helps you remove a custom-defined Essbase calculation macro.

Minimum permission required:

- Application Manager to drop a local (application-level) macro.
- Administrator to drop a global (system-level) macro.

Syntax

MACRO-NAME

You can delete custom-defined macros using **drop macro**.

Keywords

drop macro <macro-name>
Delete a custom-defined macro.

Notes

If you drop a custom-defined macro after having associated it with an application (using refresh custom definitions), you may have to stop and restart the application for the drop to take effect.

Example

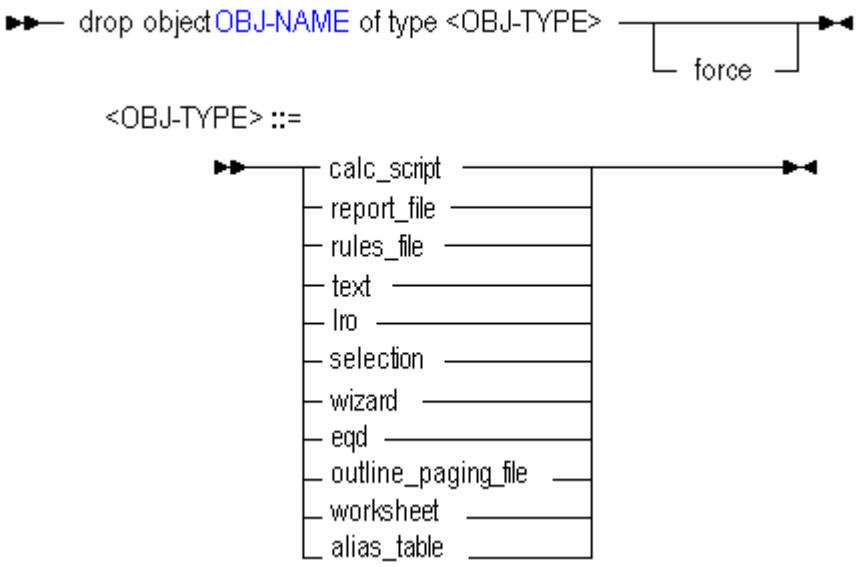
```
drop macro sample.'@COVARIANCE';
```

Deletes the macro called @COVARIANCE from the Sample application.

Drop Object

The MaxL drop object statement helps you remove Essbase database-related objects from the file catalog.

Syntax



OBJ-NAME

Keywords

...force
If the object is locked by a user or proecess, unlock it and delete it.

Notes

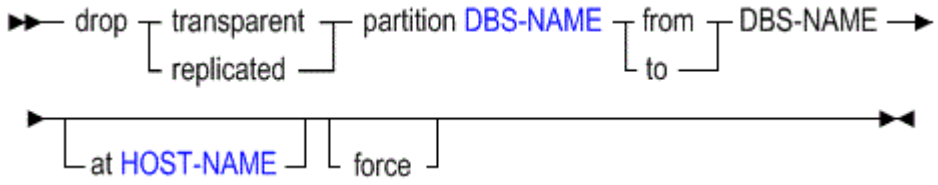
To drop a partition, use drop partition.

Drop Partition

The MaxL drop partition statement helps you remove a partition definition between two Essbase databases.

To use this statement, Database Manager permission for each cube is required.

Syntax



- DBS-NAME
- HOST-NAME

You can delete partition definitions in the following ways using **drop partition**.

Keywords

drop...partition...from
Remove a partition definition between the current target cube and a source cube.

drop...partition...to
Remove a partition definition between the current source cube and a target cube.

at <host-name>
Optionally specify the host location, if removing a partition definition associated with a remote instance.
Use the discovery URL to indicate the location. For example, "`https://myEssbase-myDomain.analytics.us2.example.com/essbase/agent`".

force
Specify that the source half of a partition definition should be dropped regardless of whether the target half is missing or invalid. For more information, see Forcing Deletion of Partitions.

Notes

If the **create partition** statement used was of the format:

```
create partition SOURCE to TARGET;
```

Then the only permutations of the **drop partition** statement that will have effect are:

```
drop partition SOURCE to TARGET;
drop partition TARGET from SOURCE;
```

Example

```
create or replace replicated partition sampeast.east area
'@IDESCENDANTS("Eastern Region"), @IDESCENDANTS(Qtr1)' to samppart.company at
"https://myEssbase-myDomain.analytics.us2.example.com/essbase/agent";

drop replicated partition Samppart.Company from Sampeast.East;
```

Drop Trigger

The MaxL drop trigger statement helps you remove a trigger created to track state changes over a selected Essbase cube area.

Syntax

TRIGGER-NAME

Example

```
drop trigger Sample.Basic.WatchCosts ;
```

Drop Trigger Spool

The MaxL drop trigger spool statement helps you delete the log file created by an Essbase trigger.

Triggers track state changes over a selected cube area. For more information about triggers, see Examples of Triggers.

Syntax

- SPOOL-NAME
- DBS-NAME

Drop User

When user authentication is managed either through EPM Shared Services or an external LDAP identity provider, you can use the MaxL drop user statement if you need to clean up inactive users from Essbase after they have been removed or renamed on the external provider.

This MaxL statement is no longer supported for any other use than the one stated above.

Syntax

USER-NAME

You can clean up users from Essbase using drop user.

Keywords

drop user <user-name>
Delete a user from Essbase. This action does not de-provision the user from the external identity provider.

Example

```
drop user Fiona;
```

Deletes the user Fiona.

Execute Calculation

The MaxL execute calculation statement helps you calculate an Essbase database. You can use this statement to run a stored calculation script, a calculation string, or the default calc.

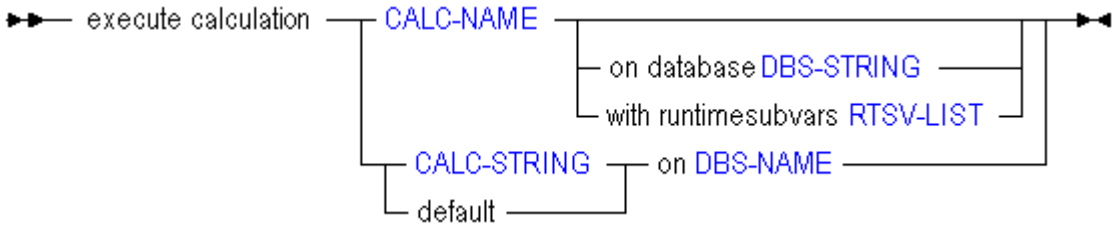
Click here for aggregate storage version

Using this statement, you can execute a particular stored calculation, or the default stored calculation (determined by alter database), or an anonymous (non-stored) calculation string.

Minimum permissions required:

- For stored calculations (CALC-NAME): Granted access to the calculation.
- For anonymous calculations (CALC-STRING) and the default calculation: Database Update

Syntax



- CALC-NAME
- DBS-STRING
- RTSV-LIST
- CALC-STRING
- DBS-NAME

You can run calculations in the following ways using execute calculation.

Keywords

execute calculation <calc-name>
Run the specified stored calculation script.

<calc-name> on database
Run the specified stored calculation script against the specified database.

<calc-string> on <dbs-name>
Run an anonymous calculation, whose body is contained in <*calc-string*>, against the specified database.

default on <dbs-name>
Run the default calculation against the specified database.

<calc-name> with runtimesubvars <rtsv-list>
Run the specified stored calculation script with the runtime substitution variables specified in *RTSV-LIST*, which is a string of runtime substitution variables specified as key/value pairs.

The string must be enclosed with single quotation marks, and the key/value pairs must be separated by a semicolon, including a semicolon after the last runtime substitution variable in the string and before the terminal single quotation mark. In this example of a runtime substitution variable string, the name and value of four runtime substitution variables are specified (for example, the value of the runtime substitution variable named "a" is 100):

```
'a=100;b=@CHILDREN("100");c="Actual"->"Final";d="New York";'
```

The string of runtime substitution variables cannot exceed 64 KB.

> **Note:**
>
> Runtime substitution variables used in a calculation script must be declared in the SET RUNTIMESUBVARS calculation command, with a name and default value. If a different value is declared in the *RTSV-LIST*, the default value is overwritten at runtime.
> If you include a runtime substitution variable in *RTSV-LIST* that has not been declared in SET RUNTIMESUBVARS, Essbase ignores the undeclared runtime substitution variable (no warnings or exceptions are generated).
> Runtime substitution variables that are used in a calculation script can be logged in the application log file, using the ENABLERTSVLOGGING configuration setting. See "Logging Runtime Substitution Variables" in the *Designing and Maintaining Essbase Cubes*.
> If the name of a runtime substitution variable that is declared in the SET RUNTIMESUBVARS calculation command is the same as a runtime substitution variable declared in *RTSV-LIST*, the value specified in *RTSV-LIST* overwrites the default value in SET RUNTIMESUBVARS.

Notes

- A stored calculation can be associated with a specific database in an application (database level), or with an application only (application level). To execute a calculation stored at the application level, you must specify which database in the application to calculate using the **on database STRING** grammar.
- A calculation script can reference runtime substitution variables using the **with runtimesubvars** grammar.

Example

```
execute calculation Sample.Basic.Calc1;
```

Calculates the Sample.Basic database using the stored calculation script file named Calc1, which is associated with the database.

```
execute calculation Sample.Calc2 on database Basic;
```

Calculates the Sample.Basic database using the stored calculation script file named Calc2, which is associated with the Sample application.

```
execute calculation
  'SET MSG ERROR;
   CALC ALL;'
on Sample.basic;
```

Calculates the Sample.Basic database using an anonymous (unstored) calculation string.

```
execute calculation Sample.Basic.Calc3 with runtimesubvars 'a=100;b=50;';
```

Calculates the Sample.Basic database using the stored calculation script file named Calc3, which is associated with the database, and the specified runtime substitution variables, in which the value of the runtime substitution variable named "a" is 100 and the value of "b" is 50.

Export Data

The MaxL export data statement helps you export data from an Essbase database.

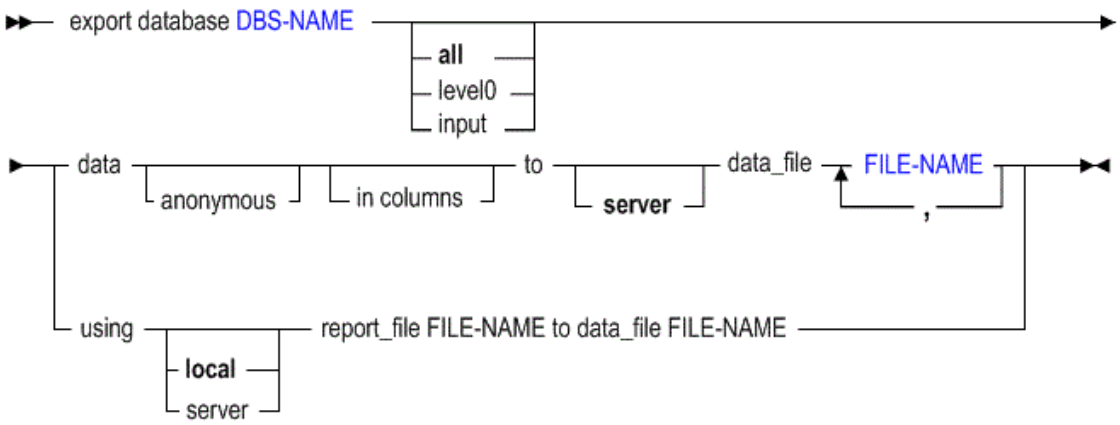
Click here for aggregate storage version

Using this statement, you can export all data, level-0 data, or input-level data, which does not include calculated values.

Essbase writes data export files to the cube directory, unless an alternate path is specified using FILEGOVPATH configuration. To use Report Writer, export the data using a report file. Export data files cannot be written to the client computer.

Minimum permission required: Database Access.

Syntax



- DBS-NAME
- FILE-NAME

You can export data from a database in the following ways using **export data**.

Keywords

export database <dbs-name> all data...
Export all data in the specified cube to the application/cube directory.

> **Note:**
>
> Exporting data does not clear the data from the database.

export database <dbs-name> level0 data...
Export level-0 data blocks only (blocks containing only level-0 sparse member combinations. Note that these blocks may contain data for upper level dense dimension members.) A level-0 block is created for sparse member combinations when all of the members of the sparse combination are at the bottom of dimension branches.

> **Note:**
>
> Exporting data does not clear the data from the cube.

export database <dbs-name> input data...
Export only blocks of data where the block contains at least one data value that was loaded (imported), rather than created as the result of a calculation.

export database <dbs-name> ... data in columns
Export data in columns, to facilitate loading the exported data into a relational database. In each row, the columnar format displays a member name from every dimension. Names can be repeated from row to row.
Columnar format provides a structure to the exported data, so that it can be used for further data processing by applications other than Essbase tools. In non-columnar format, sparse members identifying a data block are included only once for the block. Because the export file in non-columnar format is smaller than in columnar format, reloading a file in non-columnar format is faster.

export database <dbs-name> ... data anonymous
Export data in anonymized format. Anonymization removes the risk of sensitive data disclosure, and can be used in case sample data needs to be provided for technical support. Essbase replaces real data values with incremental values beginning with 0, increasing by 1 for each value in the block.

export database <dbs-name> ...using...report_file...
Run a stored report script, exporting a subset of the database.

Notes

- This statement requires the database to be started.
- To export data in parallel, specify a comma-separated list of export files, up to a maximum of 1024 file names. The number of file names determines the number of export threads. The number of available block-address ranges limits the number of export threads that

Essbase actually uses. Essbase divides the number of actual data blocks by the specified number of file names (export threads). If there are fewer actual data blocks than the specified number of export threads, the number of export threads that are created is based on the number of actual data blocks. For example, if the block storage database is very small, with only 100 data blocks, Essbase will use only 100 threads, even if you specify a higher number. This approach results in a more even distribution of data blocks between export threads.

> **Note:**
>
> In specifying the number of export files, it is important to consider the number of available CPU cores and I/O bandwidth on the computer on which Essbase Server runs. Specifying too large a number can result in poor performance.

If the data for a thread exceeds 2 GB, Essbase may divide the export data into multiple files with numbers appended to the file names.

The naming convention for additional export files is as follows: `_1`, `_2`, etc. are appended to the additional file names. If the specified output file name contains a period, the numbers are appended before the period. Otherwise, they are appended at the end of the file name.

For example, if the given file name is `exportfile.txt`, the next additional file is `exportfile_1.txt`.

- To export data in column format, use the optional "in columns" grammar.
- During a data export, the export process allows users to connect and perform read-only operations.
- When MaxL exports data from a Unicode-mode application, the export file is encoded in UTF-8. You cannot use UTF-8-encoded export files from a Unicode-mode application to import data to a non-Unicode-mode application.
- MaxL cannot export databases with names containing hyphens (-).

Example

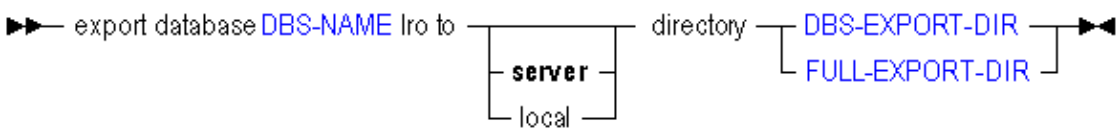
```
export database Sample.Basic data to server data_file 'myfilesamp.txt'
```

Exports data from the Sample Basic cube to `Sample/Basic/myfilesamp.txt`, or to whichever Essbase Server directory the administrator has specified for FILEGOVPATH.

Export LRO

The MaxL export lro statement helps you export linked-reporting-object information, and binary files if the Essbase cube has file-type LROs, to a directory.

Syntax



- DBS-NAME
- DBS-EXPORT-DIR
- FULL-EXPORT-DIR

You can export LRO information from a cube in the following ways using **export lro**.

Keywords

to server directory
Export the LRO information to a directory you specify on the Essbase Server to which you are connected.

to local directory
Export the LRO information to a directory you specify.

Notes

- This statement requires the cube to be started.
- MaxL creates exactly one export directory; it does not create a directory *structure*. For example, if `c:\temp` exists, MaxL will create `c:\temp\exports`, but not `c:\temp\exports\to\this\long\path`.
- If the specified export directory already exists, the export LRO statement will fail. This is a safeguard against overwriting existing export directories.
- If you do not specify a *full path* for an export directory to be created on the client or server, MaxL uses your short directory specification (DBS-EXPORT-DIR) as a suffix, and creates the destination export-directory in the `<Application Directory>/app` directory with a prefix of `appname-dbname-`. If you do specify a full path, MaxL creates whatever directory you specify.

  If you do not know where *Application Directory* is in your environment, refer to Environment Locations in the Essbase Platform.
- Relative paths (for example, `'../exports/lros'`) are not supported.
- The export directory and `.exp` file are visible on the Essbase server machine, but are not in the Files catalog in Essbase web interface.
- When MaxL exports LROs from a cube, if the cube is from a Unicode-mode application, the exported LRO-catalog file is encoded in UTF-8. You cannot use UTF-8-encoded export files from a Unicode-mode application to import LROs to a non-Unicode mode application.
- The exported lros can be imported into a cube using import lro.

Example

```
export database sample.basic lro to server directory '/scratch/exports/lros';
```

Exports LRO-catalog information, and binary files if the cube has file-type LROs, to a server directory `lros`, under `/scratch/exports/`. The statement will fail unless `/scratch/exports/` already exists. The directory contains file-type LROs, if applicable, and the LRO-catalog export file `lros.exp`. These can be brought back into a cube using import lro. The export directory and `.exp` file are visible on the

Essbase server machine, but are not in the Files catalog in Essbase web interface.

The example will work only once, because MaxL will not overwrite the existing directory.

```
export database sample.basic lro to server directory 'exportedLROs';
```

Exports LRO-catalog information, and binary files if the cube has file-type LROs, to a server directory `<Application Directory>/app/sample-basic-exportedLROs`. The directory contains file-type LROs, if applicable, and the LRO-catalog export file named `sample-basic-exportedLROs.exp`. These can be brought back into a cube using import lro.

The example will work only once, because MaxL will not overwrite the existing directory.

```
export database sample.basic lro to local directory 'C:\\EssbaseMaxL\
\myexports';
```

The example above exports LROs to a local directory on a Windows MaxL client. The statement succeeds only if directory `C:\EssbaseMaxL` exists.

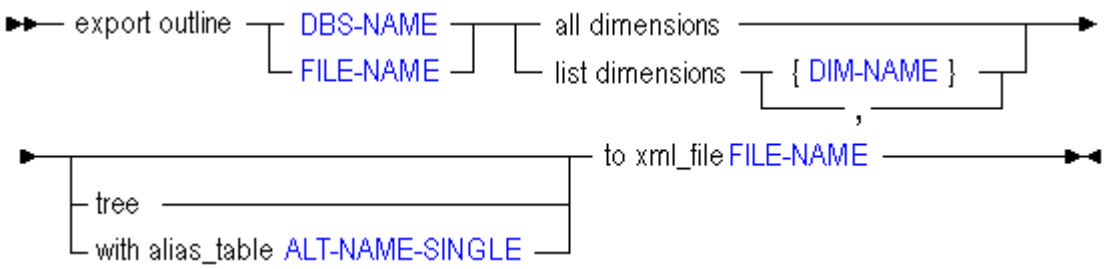
Export Outline

The MaxL export outline statement helps you export Essbase metadata, either from the active cube outline or an input outline file, to a specified XML file.

Export outline files must be written to a location on the Essbase Server or client machine on which the **export outline** MaxL statement is run.

Permission required: Database Manager.

Syntax



- DBS-NAME
- FILE-NAME
- DIM-NAME

- ALT-NAME-SINGLE

You can export metadata information from a cube in the following ways using **export outline**.

Keywords

DBS-NAME
Specify the cube name instead of the outline file path.

FILE-NAME
Specify the outline file path instead of the cube name.

all dimensions
Export information about all dimensions in the cube.

list dimensions
Export information about only the listed dimensions. Specify each dimension name within curly braces, and separated by commas.

tree
Export only the member names in the hierarchy, omitting full metadata details.

with alias_table
Export using only the member names indicated in the specified alias table.

to xml_file
Specify the absolute path to the output XML file, including the file name.

Notes

- This statement requires the cube to be started.
- The following general outline information is included in the XML export:
  - Case sensitiveness
  - Outline Type
  - Duplicate Member Names allowed
  - Typed Measures Enabled
  - Date Format
  - Varying Attributes Enabled
  - Alias Table count and list
  - Active Alias Table
  - Attribute information
  - Auto configure
  - Text list definitions
  - Universal member comments
  - Locale, if it exists
  - Query hint list (if aggregate storage)
- The following dimension information is included in the XML export:
  - Name
  - Two pass calc

  - Type
  - Text list, if text typed
  - Formula
  - Format String
  - Comment
  - Extended member comment
  - Dimension category
  - Attribute type
  - Data Storage
  - Dimension Storage
  - Alias Names, if any
  - UDAs, if any
  - Consolidation
  - Attribute dimension associated
  - Independent dimensions, if any
  - Time balance
  - Skip options
  - Variance reporting
  - Currency conversion
  - Currency conversion member
  - Dynamic Time Series enabled list
  - Attachment level, if linked attribute dimension
  - Dimension solve order
  - Is Non Unique dimension?
  - Hierarchy type
  - Level usage for aggregation (for aggregate storage hierarchies)
  - Is Compression dimension? (if aggregate storage)
  - Storage category
- The following member information is included in the XML export:
  - Name
  - Two pass calc
  - Type
  - Text list, if text typed
  - Is shared?
  - Shared member name, if shared
  - Formula
  - Format string
  - Comment

- Extended member comment
- Attribute type
- Data storage
- Dimension storage
- Alias names, if any
- UDAs, if any
- Consolidation
- Attribute member associated
- Validity sets, if any
- Time balance
- Skip options
- Variance reporting
- Currency conversion
- Currency conversion member
- Member solve order (if aggregate storage)
- Level usage for aggregation (for aggregate storage hierarchy members)

Example

Linux Example 1

```
export outline sample.basic all dimensions to xml_file '/scratch/myexports/
basic.xml';
```

Exports all outline information from Sample.Basic to the specified XML file, `basic.xml`.

Linux Example 2

```
export outline sample.basic list dimensions {"Product", "Market"} tree to
xml_file '/scratch/myexports/basic.xml';
```

Exports information about Product and Market dimensions from Sample.Basic to the XML file.

Windows Example

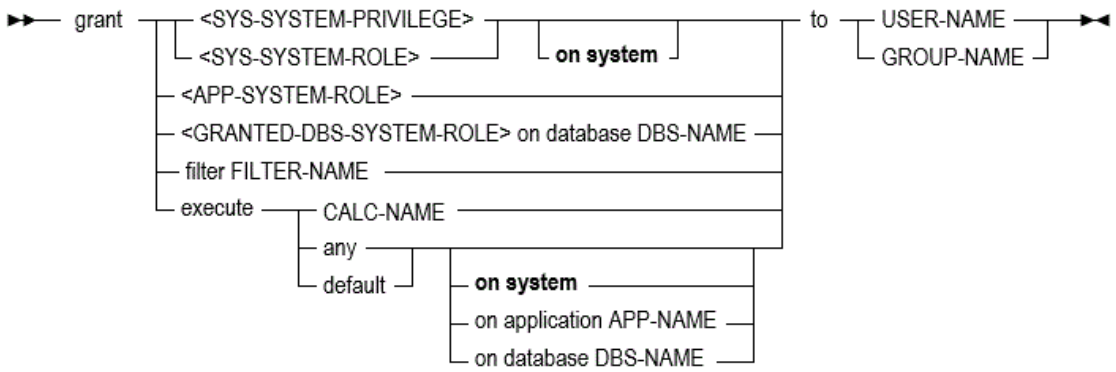
```
export outline sample.basic all dimensions with alias_table "Default" to
xml_file 'C:\\myexports\\basic.xml';
```

Exports information about all dimensions in Sample.Basic, using only default alias names.

Grant

The MaxL grant statement helps you assign an Essbase security filter or a stored calculation to a user or group. If Essbase uses EPM Shared Services security mode, you can also grant privileges and roles.

Syntax



- FILTER-NAME
- USER-NAME
- GROUP-NAME
- CALC-NAME
- System-Level System Privileges
- System-Level System Roles
- Application-Level System Roles
- Database-Level System Roles

You can grant permissions to users and groups in the following ways using **grant**.

Keywords

<SYS-SYSTEM-PRIVILEGE>
Grant a system-level privilege to a user or group. Available only if Essbase uses EPM Shared Services security mode.

<SYS-SYSTEM-ROLE>
Grant a system-level role to a user or group. Available only if Essbase uses EPM Shared Services security mode.

<APP-SYSTEM-ROLE>
Grant an application-level role to a user or group. Available only if Essbase uses EPM Shared Services security mode.

<GRANTED-DBS-SYSTEM-ROLE>
Grant a database-level role to a user or group. Available only if Essbase uses EPM Shared Services security mode. In this mode, user or group access can only be assigned at the application level. If the application has more than one database (cube), trying to change

access for one cube implicitly changes the access privilege on all cubes belonging to that application.

filter <filter-name> to...
Assign a filter to a user or group that grants or denies permissions to the specified database at a data-value level of detail.

execute <calc-name> to...
Grant the user or group permission to run the specified stored calculation script.

execute any on system to...
Grant the user or group permission to run any calculation against any database on the Essbase Server.

execute any on application...to...
Grant the user or group permission to run any calculation against any databases in the specified application.

execute any on database...to...
Grant the user or group permission to run any calculation against the specified database.

execute default on system to...
Grant the user or group permission to run the default calculation against any database on the Essbase Server.

execute default on application...to...
Grant the user or group permission to run the default calculation against any databases in the specified application.

execute default on database...to...
Grant the user or group permission to run the default calculation against the specified database. The default calculation is typically 'CALC ALL;', but it can be changed using **alter application set default calculation**.

Notes

Granting filters:

Users may be granted multiple filters per database.

Granting calculations:

A user or group may have any number of calculations per database. Therefore, granting a calculation adds it to the user or group's list of calculations. **Grant execute any** gives the user or group permission to execute all calculations, including the default calculation.

Example

```
grant filter Sample.basic.filter8 to Fiona;
```

Import Data

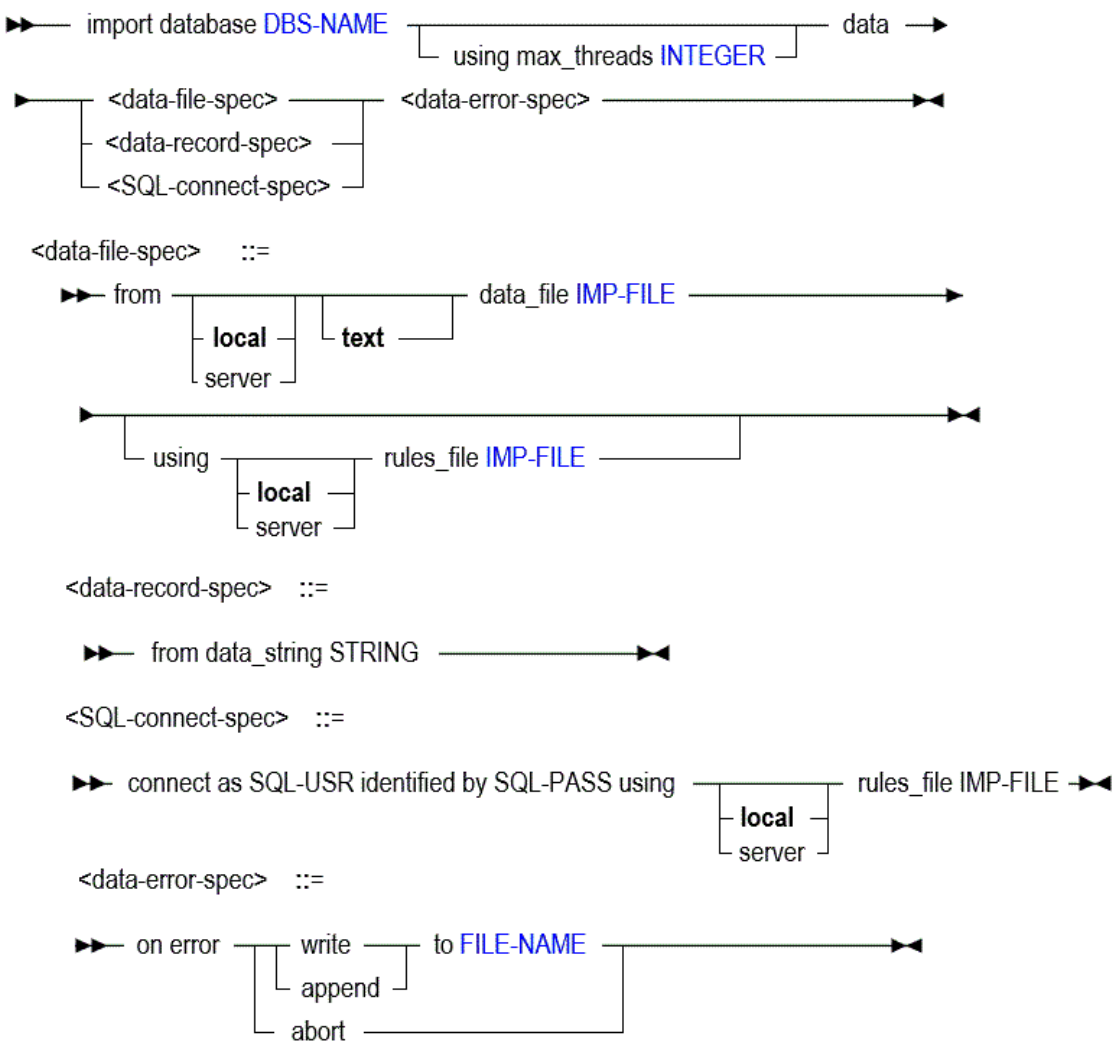
The MaxL import data statement helps you load data into an Essbase database.

Click here for aggregate storage version

You can import data from data files or external sources, with or without a rules file.

Minimum permission required: Write.

Syntax



- DBS-NAME
- INTEGER
- IMP-FILE
- FILE-NAME

You can import data to a database in the following ways using **import data**.

Keywords

...using max_threads INTEGER
Optionally specify a maximum number of threads to use, if this is a parallel data load.
If this clause is omitted for a parallel data load, Essbase uses a number of pipelines equal to the lesser of number of files, or half the number of CPU cores.

import database <dbs-name> data from...
Specify whether the data import file(s) are local or on the server, and specify the type of import file(s).
To import from multiple files in parallel, use the wildcard characters `*` and/or `?` in the IMP-FILE name so that all intended import files are matched.

- `*` substitutes any number of characters, and can be used anywhere in the pattern. For example, `day*.txt` matches an entire set of import files ranging from `day1.txt - day9.txt`.
- `?*` substitutes one occurrence of any character, and can be used anywhere in the pattern. For example, `0?-*-2011.txt` matches data source files named by date, for the single-digit months (Jan to Sept).

...using ... rules_file
Import data into the database using a specified rules file. If you are using a rules file for a parallel data load, all the data files in the load must be able to use the same rules file.

...<data error spec> (on error...)
Required. Tell Essbase what to do in case of errors during the data load: abort the operation, or write or append to a specified error log.

...<data record spec> from data_string
Load a single data record into the selected database. The string following **data_string** must be a contiguous line, without newline characters.

...<SQL connect spec> (connect as...)
If you are importing from an SQL source, you must always use a rule file. Provide the appropriate user name and password:

- If the network connectivity to the source data is saved in an Essbase connection and Datasource, provide your Essbase credentials in the MaxL statement. For example:

```
import database Sample.Basic data connect as "Essbaseadmin" identified by
"Essbasepa55w0RD" using server rules_file "myrulefile" on error write to
'loadds.err';
```

- Otherwise, provide the user name and password required to connect to the external RDBMS source. For example:

```
import database Sample.Basic data connect as "RDBMSuser" identified by
"RDBMSpa55w0RD" using server rules_file "myrulefile" on error write to
'loadds.err';
```

Notes

- This statement requires the database to be started.
- When using the import statement, you must specify what should happen in case of an error.

Example

When the Essbase file catalog location is unspecified, the cube directory is the assumed location.

The following example performs a data load using a data file stored in the shared folder of the Essbase file catalog. The rule file is in the cube directory for Sample Basic.

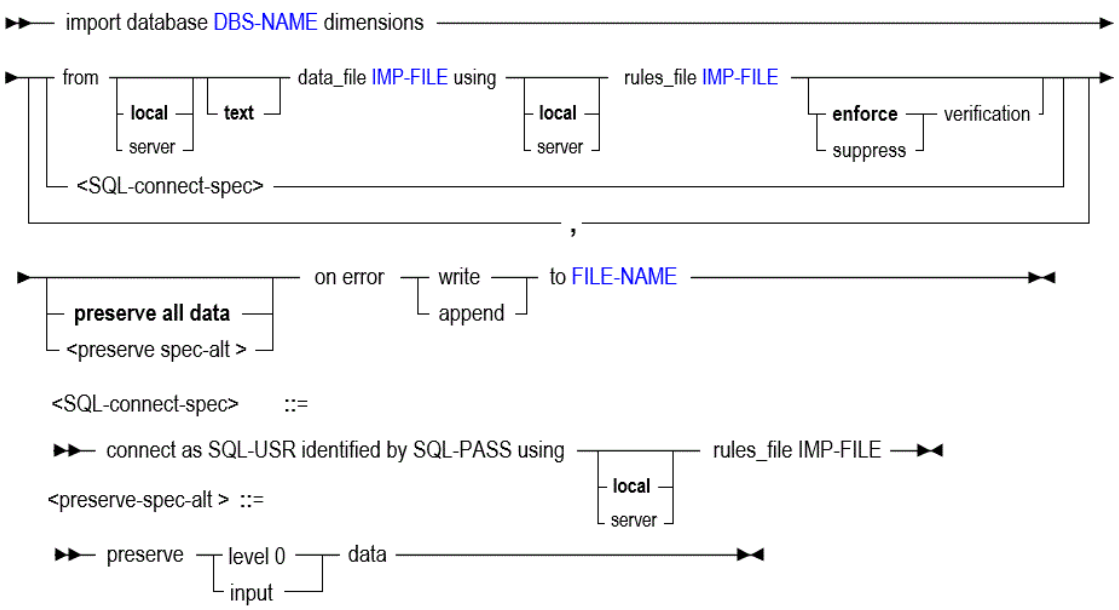
```
import database 'Sample'.'Basic' data from server data_file 'catalog/shared/
Data_Basic' using server rules_file 'Data' on error write to "dataload.err";
```

Import Dimensions

The MaxL import dimensions statement helps you load dimensions into an Essbase database.

Minimum permission required: Write.

Syntax



- DBS-NAME
- IMP-FILE
- FILE-NAME

You can import dimensions to a database in the following ways using **import dimensions**.

Keywords

import database <dbs-name> dimensions from...
Specify whether the dimension import is from a local or server file, and what type of file to import the dimension from.

...using ... rules_file
Import dimensions into the database outline using a specified rules file.

...enforce verification
Verify the outline resulting from the dimension build. This is the default behavior.

...suppress verification
Do not verify the outline resulting from the dimension build.

> **Caution:**
>
> Using this option defers restructuring.

...preserve all data
If you need to preserve all data when importing dimensions, specify that here.

...on error...
Tell Essbase what to do in case of errors during the dimension build: abort the operation, or write or append to an error log.

...<SQL connect spec> (connect as...)
If you are importing from an SQL source, you must always use a rule file. Provide the appropriate user name and password:

- If the network connectivity to the source data is saved in an Essbase connection and Datasource, provide your Essbase credentials in the MaxL statement.
- Otherwise, provide the user name and password required to connect to the external RDBMS source.

...<preserve spec alt> (preserve...data)
If you need to preserve level-0 or input data when importing dimensions, specify that here.

Notes

- This statement requires the database to be started.
- When using the import statement, you must specify how error logs should be handled.
- When multiple files are included in the same statement, restructure is deferred until all files have been processed. The deferred-restructure type of dimension build has been called an incremental dimension build.
- When the **suppress verification** option is used, restructure is deferred.
- When multiple files are included in the same statement, **be sure verification is enforced for the last file**.

Example

The following example performs a dimension build using a data file stored in the shared folder of the Essbase file catalog. The rule file is in the cube directory for Sample Basic.

```
import database 'Sample'.'Basic' dimensions from server data_file 'catalog/
shared/addproducts' using server rules_file 'addproduct' on error write to
"dimrule.err";
```

The following example performs a dimension build using a data file and rule file located in the cube directory for Sample Basic. When the Essbase file catalog location are unspecified, as in this example, the cube directory is assumed to be the location of the files. In other words, if

`dims.txt` and `rulesfile.rul` both exist in the cube directory, then the dimension build will use these files.

```
import database sample.basic dimensions
from data_file 'dims.txt' using rules_file 'rulesfile.rul'
on error append to "dimbuild.log";
```

The following example performs a dimension build using a data file stored in a user directory in the Essbase file catalog. The rule file is in the shared directory in the catalog.

```
import database 'Sample'.'Basic' dimensions from server data_file 'catalog/
users/user1/Dim_Market' using server rules_file 'catalog/shared/Dim_Market'
on error write to "dimrule.err";
```

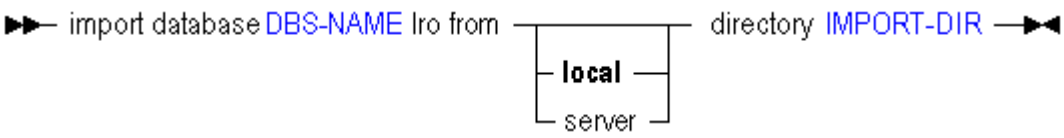
Import LRO

The MaxL import lro statement helps you import Linked Reporting Objects (LROs) into an Essbase cube.

You import LROs from the specified output directory created by export lro. The directory contains an ASCII `.exp` file containing LRO-catalog information, and LRO binary files (if the database from which LROs were exported contained file-type LROs).

Minimum permission required: Write.

Syntax



- DBS-NAME
- IMPORT-DIR

You can import exported LRO information to a cube using **import lro**.

Keywords

import database <dbs-name> lro...
Import Linked Reporting Objects (LROs) from the specified export directory on the local machine or on a remote server where the Essbase Server resides.

Notes

- This statement requires the cube to be started.
- The specified import directory must come from the results of the export lro operation. The exported LRO-catalog file contains a record of the LRO file locations, cell notes, or URL text, and database index locations to use for re-importing to the correct data blocks.
- In the paths in the second two examples, double quotation marks are used to allow variable expansion in the string IMPORT-DIR, and single quotation marks are required because there are special characters (see MaxL Syntax Notes) in the path name.

Example

Windows Example

Referencing an absolute path to an export directory:

```
import database sample.basic lro
from server directory 'C:\\exports\\lros';
```

Linux Example

Referencing an absolute path to an export directory:

```
import database sample.basic lro from server directory '/scratch/exports/
lros';
```

Generic Example

The following example works on Windows or Linux. It references a server directory, <*Application Directory*>/app/Sample-Basic-exportedLROs:

```
import database sample.basic lro
from directory 'Sample-Basic-exportedLROs';
```

If you do not know where *Application Directory* is in your environment, refer to Environment Locations in the Essbase Platform.

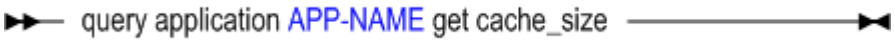
Query Application

The MaxL query application statement helps you get information about the current state of an Essbase application.

Click here for aggregate storage version

This statement requires the application to be started.

Syntax



APP-NAME

You can query application state information using keywords.

Keywords

get cache_size
Check the current maximum size setting to which the application cache may grow. The application cache grows dynamically until it reaches this limit. The application cache is used for hybrid aggregation in block storage databases, and can help you manage memory usage for retrievals.

Example

The following MaxL statement:

```
query application sample get cache_size;
```

returns the maximum size (in kilobytes) to which the application cache may grow.

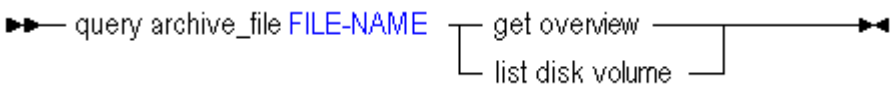
Query Archive_File

The MaxL query archive_file statement helps you retrieve information about the Essbase database backup archive file.

Minimum permission required: Read.

The database must be running.

Syntax



FILE-NAME

You can query archive file information using keywords.

Keywords

get overview
Retrieve the following overview information:

- Application name
- Database name
- Time when the archive was performed

list disk volume
Retrieve a list of disk volume names.

Example

```
query archive_file /archives/samplebasic.arc get overview;
```

Retrieves overview information about the `samplebasic.arc` backup archive file.

```
query archive_file /archives/samplebasic.arc list disk volume;
```

Retrieves disk volume information about the `samplebasic.arc` backup archive file.

Query Database

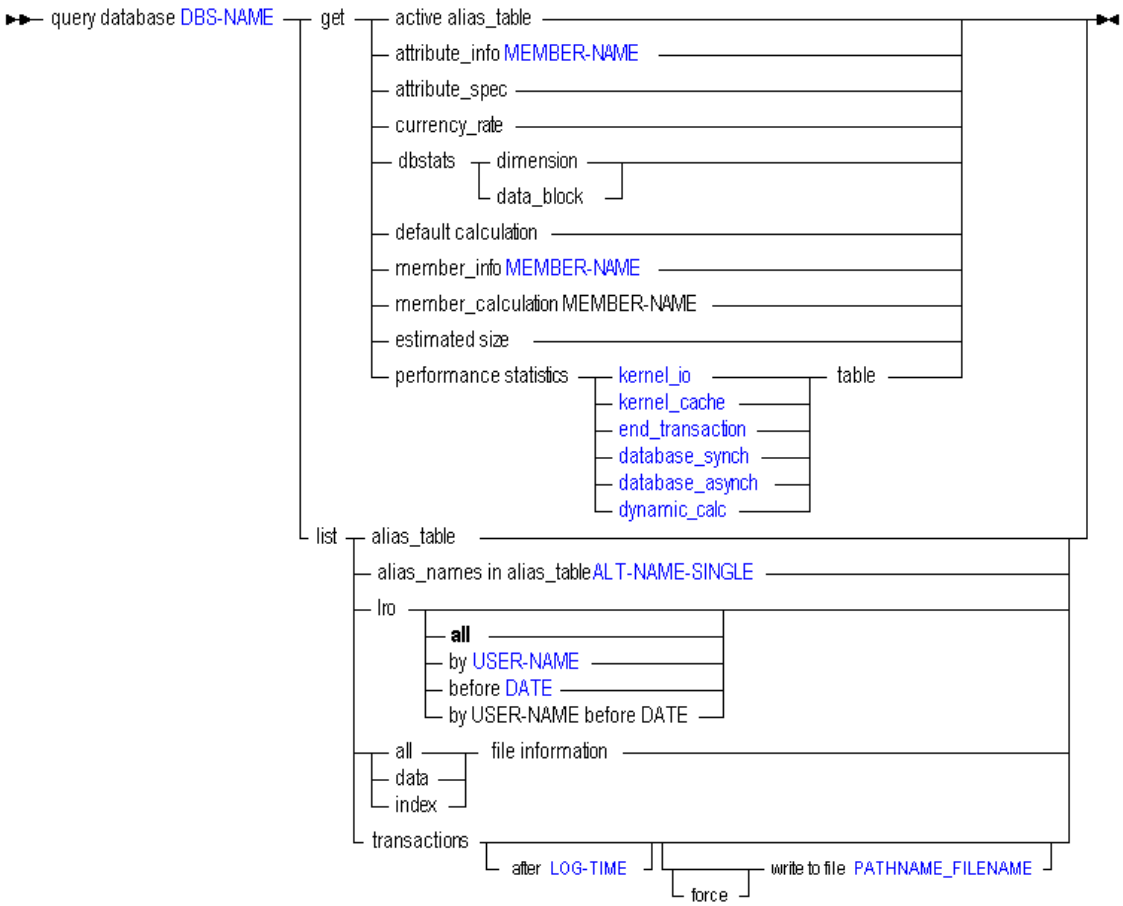
The MaxL query database statement helps you retrieve advanced information about the current state of an Essbase database that is running.

Click here for aggregate storage version

Minimum permission required: Read.

This statement requires the database to be started.

Syntax



- DBS-NAME
- MEMBER-NAME
- ALT-NAME-SINGLE
- USER-NAME
- DATE
- LOG-TIME
- PATHNAME_FILENAME

You can query for database information in the following ways using **query database**.

Keywords

get active alias_table
Display the active alias table for the user issuing the statement.

get attribute_info
Get attribute member, dimension, and name information for the specified attribute member.

get attribute_spec
Display the current attribute specifications for the database. These specifications include attribute member name format, Attribute Calculation dimension member names, Boolean and date member names, and numeric range specifications.

get currency_rate
Display the currency rate for every currency partition.

get dbstats dimension
Get information about dimensions.
Output
The **index_type** field values are numeric, and translate as follows:

```
0   Dense
1               Sparse
3               None (database is aggregate storage)
```

get dbstats data_block
Get information about data blocks. The information returned has little relevance to aggregate storage databases.
Output
The type field values are numeric, and translate as follows:

```
0               Array
1               AVL (or "B+ Tree")
```

get default calculation
View the contents of the calculation designated as default for the database. The default calculation refers to either the relations defined in the database outline (CALC ALL) or to the set of calculation strings defined as the default database calculation.

get member_info MEMBER-NAME
Get information on a specific member.
Output
The **unary_type** field values are numeric, and translate as follows:

```
0               Add
1               Subtract
2               Multiply
3               Divide
4               Percent
5               NoRollUp
```

The **member_tag_type** field values translate as follows:

```
0               SkipNone
16384           SkipMissing
32768           SkipZero
49152           SkipBoth
1               BalFirst
2               BalLast
4               TwoPass
8               Average
64              Expense
```

Variations are possible. The field value consists of one of the first four "skip" values plus any/all/none of the last five values. Some examples:

```
0               SkipNone
77              SkipNone, BalFirst, TwoPass, Average, Expense
16385           SkipMissing and BalFirst
```

The first four "skip" values are base values, and added to them are combinations of 1, 2, 4, 8, and 64.
The **status** field values are hexadecimal, and translate as follows:

```
0               Normal
1               Never Share
2               Label
4               Refer Share
8               Refer Share (with different name)
16              Implicit share
32              Virtual Member (stored)
64              Virtual Member (not stored)
2048            Attribute
32768           Referred
```

get member_calculation MEMBER-NAME
View the formula associated with the selected member.

get estimated size
Display an estimate of the number of blocks a database will create after full calculation (CALC ALL), based on the number of blocks that exist before calculation. The database can have all data loaded, or it can have a random sampling of data loaded. Outlines that contain sparse formulas of any type or top-down formulas are not supported. Results of the estimation on such databases may be invalid.

performance statistics...table
Display one of several choices of performance statistics tables. Before you can use this statement, you must enable performance statistics gathering, using alter database *DBS-NAME* set performance statistics enabled.

list alias_table
Get a list of alias tables that are defined for the database.

list alias_names in alias_table
List the alias names defined in an alias table. Alias tables contain sets of aliases for member names and are stored in the database outline. Use this grammar to see a list of alias names defined in the specified table.

list lro
Get information about linked objects, including the object type, name, and description, based on criteria you specify. If you specify both a user name and modification date, objects matching both criteria are listed. If you specify no user name or date, a list of all linked objects in the database is displayed.

list...file information
Get accurate index and data file information. Provides index and data file names, counts, sizes, and totals, and indicates whether or not each file is presently opened by Essbase. The file size information is accurate. Note that the file size information provided by the Windows operating system for index and data files that reside on NTFS volumes may not be accurate.

list transactions
Display, in the MaxL Shell window, database transactions that were logged after the time when the last replay request was originally executed or after the last restored backup's time (which ever occurred later).

list transactions after LOG-TIME
Display, in the MaxL Shell window, database transactions that were logged after the specified time. Enclose the TIME value in quotation marks; for example: '11_20_2007:12:20:00'

list transactions after LOG-TIME write to file PATHNAME_FILENAME
Write the list of database transactions to the specified file. The list output is written to a comma-separated file on the Essbase Server computer.
Provide the full pathname to an existing directory and the name of the output file. If only the output file name is provided, Essbase writes the file to the application directory.
When writing to an output file that already exists, you must use the **force** grammar to overwrite the file.

list transactions force write to file PATHNAME_FILENAME
Overwrite the contents of an existing output file.

list transactions after TIME...write to file PATHNAME_FILENAME
Write the list of database transactions that were logged after the specified time to the specified file.

Example

Example 1

```
query database Sample.Basic list transactions;
```

Displays, in the MaxL Shell window, Sample.Basic database transactions that were logged after the time when the last replay request was originally executed or after the last restored backup's time (which ever occurred later).

Example 2

```
query database Sample.Basic list transactions after '11_20_2007:12:20:00'
write to file 'C:\\Hyperion\\products\\Essbase\\EssbaseServer\\app\\Sample\
\Basic\\listoutput.csv';
```

Writes the transactions in the Sample.Basic database that were logged after November 20, 2007 at 12:20:00 to a CSV file in the Sample.Basic database directory.

Example 3

```
query database sample.basic get member_calculation 'Profit per Ounce';
```

Displays the formula associated with the 'Profit per Ounce' member.

Example 4

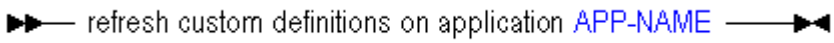
```
query database sample.basic list lro before '06_16_2008';
```

Displays information about linked objects, in the Sample.Basic database, that were modified before the specified time.

Refresh Custom Definitions

The MaxL refresh custom definitions statement helps you update the record of any custom-defined Essbase calculation functions and macros that are associated with an application, without restarting the application.

Syntax



APP-NAME

Keywords

refresh custom definitions on application...
Refresh the definitions of custom-defined functions or macros associated with the specified application, without restarting the application. To refresh global definitions, issue the statement separately for each application on the Essbase Server.

Notes

- This statement re-reads the custom-defined function and macro records on the Agent, and associates newly created functions or macros with the specified application (since the last refresh, or since the last time the application was restarted).
- A local function or macro must have been created using the double naming convention to indicate application context: see create function or create macro for details.

- Invalidly defined functions and macros are not loaded to the application.
- Validation occurs at the application level only, during the refresh (not during creation). There is no validation on the system level.

Example

```
refresh custom definitions on application Sample;
```

Loads all valid, newly created local functions and macros for the application Sample.

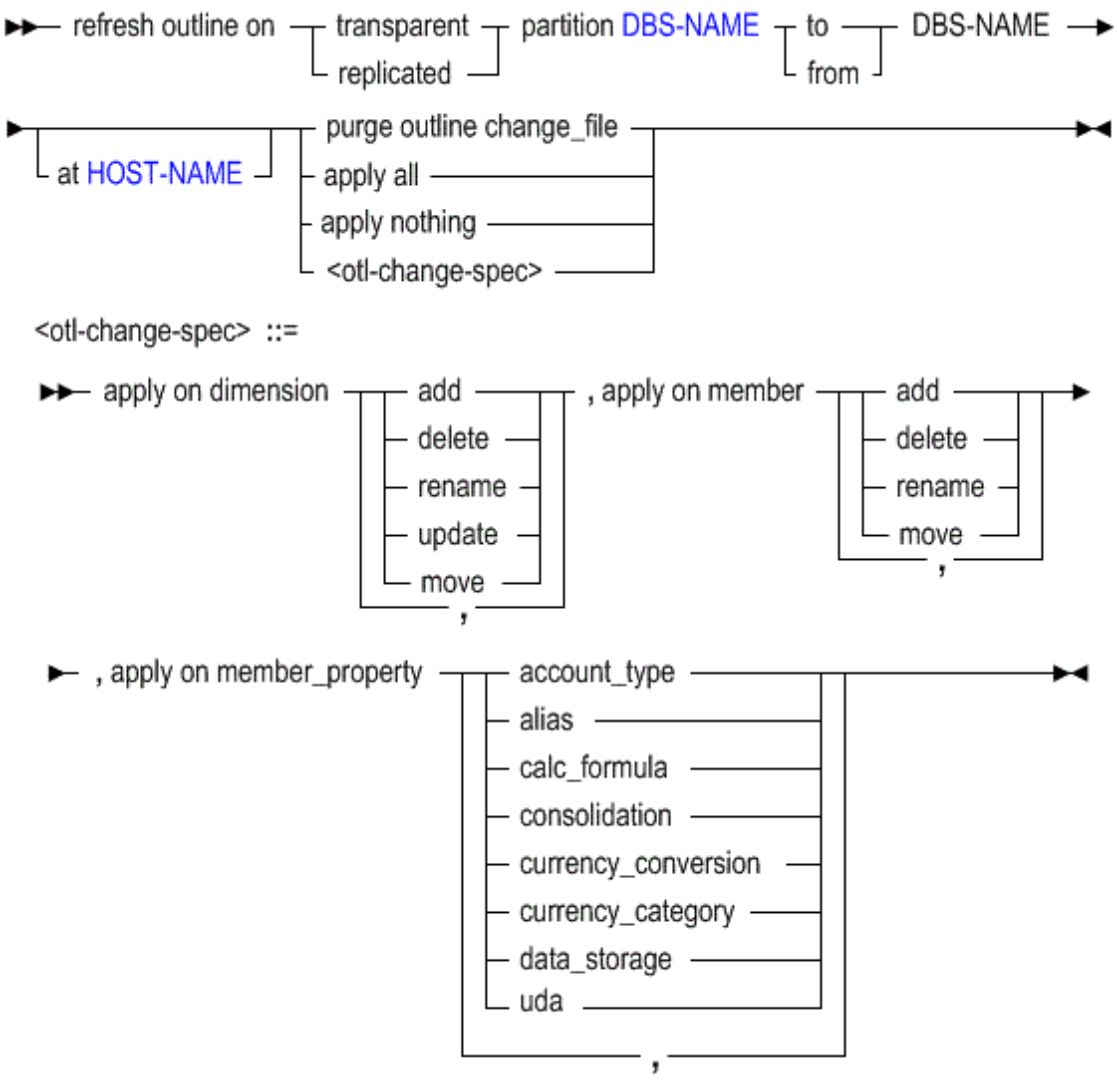
Refresh Outline

The MaxL refresh outline statement helps you synchronize the outlines between partitioned Essbase databases.

Use this statement in the event that one Essbase outline has undergone changes to dimensions, members, or member properties, and you wish to propagate those changes to the partitioned database.

Outline synchronization is not enabled for partitions that involve aggregate storage databases.

Syntax



- DBS-NAME
- HOST-NAME

You can synchronize the outlines between partitioned databases using **refresh outline**.

Keywords

...to...
Use the current source outline to refresh the remote target outline.

...from...
Refresh the current target outline using the remote source outline.

purge outline change_file
Clear any source outline changes that have already been applied to the target outline or have been rejected. Source outline changes that have not been applied or rejected are not deleted from the outline change file.

apply all
Refresh all aspects of the target outline, including dimension changes, member changes, and member property changes made to the source outline. This is the recommended method for refreshing outlines, because if you choose to omit some changes, those changes cannot be applied later.

apply nothing
Do not apply source outline changes to any aspects of the target outline. The target outline will be considered synchronized to the source, and the timestamp will be updated, although source changes were not actually applied to the target.

apply on dimension...
Refresh the target outline with all or some dimension changes made to the source outline.

- **add**: Refresh with added dimensions.
- **delete**: Refresh by deleting dimensions.
- **rename**: Refresh with renamed dimensions.
- **update**: Refresh with dimensions that have member updates (required if the statement will also use **apply on member**).
- **move**: Refresh the order of dimensions in the outline.

Use commas to separate the types of source dimension changes to refresh on the target. For example, to refresh only with added or moved dimensions, use the following phrase: `apply on dimension add, move`.

apply on member...
Refresh the target outline with all or some physical member changes made to the source outline. Requires **apply on dimension update**.

- **add**: Refresh dimensions with added members.
- **delete**: Refresh dimensions by deleting members.
- **rename**: Refresh dimensions with renamed members.
- **move**: Refresh the order or hierarchy of members in the dimension.

Use commas to separate the types of source member changes to refresh on the target. For example, to refresh only with added or moved members, use the following phrase: `apply on dimension update, apply on member add, move`.

apply on member_property...
Refresh the target outline with all or some member property changes made to the source outline. Requires **apply on dimension update**.

- **account_type**: Refresh with changes in account type.
- **alias**: Refresh with changes to aliases.
- **calc_formula**: Refresh with changes to member formulas.
- **consolidation**: Refresh with changes to consolidation tags.
- **currency_conversion**: Refresh with changes to currency conversion flags.
- **currency_category**: Refresh with changes to currency categories.
- **data_storage**: Refresh with changes to data storage tags.
- **uda**: Refresh with changes to UDAs.

Use commas to separate the types of source member-property changes to refresh on the target. For example, to refresh only with updated member formulas, use the following phrase: `apply on dimension update, apply on member_property calc_formula.`

Example

```
refresh outline on replicated partition sampeast.east to samppart.company
 apply all;
```

Refreshes the target outline (for Samppart.company database) with any and all changes made to the source outline (Sampeast.east).

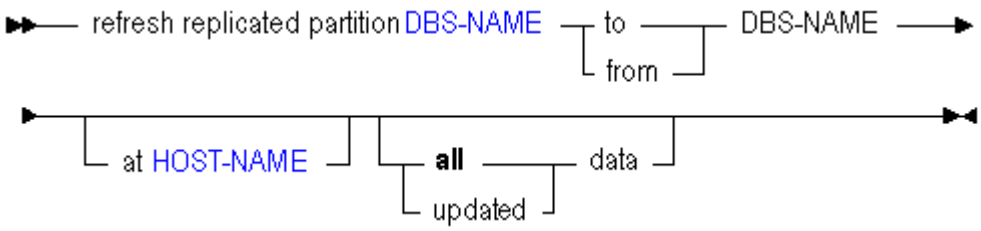
```
refresh outline on replicated partition Sampeast.east to Samppart.company
apply on dimension update, apply on member rename, apply on member_property
account_type;
```

Refreshes the target outline (for Samppart.company database) with changes made to the source outline (Sampeast.east), reflecting the following update to a dimension: a member tagged Accounts was renamed.

Refresh Replicated Partition

The MaxL refresh replicated partition statement helps you synchronize the current Essbase replicated-partition target cube from the remote (second DBS-NAME) source partition. Database Manager permission for each cube is required.

Syntax



- DBS-NAME
- HOST-NAME

You can update a replicated-partition using **refresh replicated partition**.

Keywords

...to...
Use the current replicated-partition source cube to refresh the remote target partition.

...from...
Refresh the current replicated-partition target cube from the remote source partition.

...updated data
Refresh a replicated-partition cube only with data that has been updated since the last refresh.

...all data
Refresh a replicated-partition cube with all data, regardless of the last refresh.

Example

```
refresh replicated partition sampeast.east to samppart.company at "https://
myEssbase-myDomain.analytics.us2.example.com/essbase/agent" all data;
```

Performance Statistics in MaxL

MaxL statements can help you collect and analyze Essbase performance statistics. Performance statistics help you understand whether the databases are in good running condition or need modifications to improve performance.

About Performance Statistics

Query database returns medium and long performance statistics for the database and application. The statistics appear as tables in the MaxL output. To gather performance statistics, you must first enable statistics gathering using alter database <dbs-name> set performance statistics enabled. You also use `alter database` to return to zero the statistical *persistence* (length) and *scope* (granularity).

The output of query database can vary depending on what the system has just done, how long statistics have been gathered, and the persistence level of the gathered statistics. The tables give information on a typical set of statistics. It can be very helpful to compare two sets of statistics gathered at similar points in the server's operation, such as after two comparable updates or after two restructure operations. Statistics should be gathered at intervals and compared to each other to identify differences. Compare the statistics gathered before and after any changes to the system and if the system performance changes.

> **Note:**
>
> Depending on the calculations you choose to perform, if any, some tables may or may not be displayed in your output log.

Kernel Input/Output Statistics

The Kernel I/O Statistics table summarizes input/output for the entire application.

There is one Kernel I/O Statistics table per application.

Persistence/Scope of this table: **med/server**

Table 3-6 Kernel IO Statistics

Kernel I/O	Read (OS reads from disk)	Write (OS writes to disk)
# Index	I/O Number of reads that occurred through the index cache.	Number of writes that occurred through the index cache.
# Data I/O	Number of reads that occurred through the data cache.	Number of writes that occurred through the data cache.

Table 3-6 (Cont.) Kernel IO Statistics

Kernel I/O	Read (OS reads from disk)	Write (OS writes to disk)
# Fground I/O	Number of data reads that occurred in the foreground (while a process waited for data to be read).	Number of data writes that occurred in the foreground (while a process waited for data to be written).
# Index bytes	Number of bytes read from .IND files.	Number of bytes written to .IND files.
# Data bytes	Number of bytes read from .PAG files.	Number of bytes written to .PAG files.
Av byte/dat I/O	Average byte size of data reads. A high number is preferable.	Average byte size of data writes. A high number is preferable.

Kernel Cache Statistics

The Kernel Cache Statistics table assists you in determining how to size Essbase caches.

Make caches only as large as necessary for optimum performance. Note that cache sizes are listed in order of importance: index, data file, data.

- The index cache is a buffer in memory that holds index pages.
- The data file cache is a physical data cache layer designed to hold compressed data blocks.
- The data cache is a buffer in memory that holds data pages.

The Essbase kernel uses caches to manage memory. As a rule, data that is useful to processes should be kept in memory rather than on a disk. Replacements occur when something needed for a process is moved from disk to cache and something in the cache is thrown away to make room for it.

Make the caches as small as possible; however, if replacements for a cache are greater than 0, the cache may be too small. Appropriate sizing of the Index cache is the most important for optimal performance; appropriate sizing of the Data cache is the least important.

Persistence/Scope of this table: **long/db**

Table 3-7 Kernel Cache Statistics

Kernel Cache Statistic	Description
# Blocks	Number of blocks actually in the Index cache, Data file cache, and Data cache. The block size multiplied by the number of blocks equals the amount of cache memory being used. Compare this figure to the block estimation you initially used to size your database.
# Replacements	Number of replacements per cache. Replacements occur when data moves from disk to cache and something in the cache is deleted to make room. If the number or replacements is low or zero, the cache might be set too large.

Table 3-7 (Cont.) Kernel Cache Statistics

Kernel Cache Statistic	Description
# Dirty repl	Number of dirty replacements per cache. A dirty replacement is one that requires a write to the disk before cache memory can be reused by a process. The data needed for the process is "dirty" because it was modified in memory but not saved to the disk. Dirty replacements are inefficient and expensive. They indicate that a cache might be too small.
Log blk xfer in	Number of logical blocks transferred to the Data file cache and Data cache (this measurement is not applicable for the Index cache.) If you are changing cache sizes, it may be instructive to study this statistic and note changes in data traffic.

Cache End-Transaction Statistics

The Cache End-Transaction Statistics table measures DBWriter efficiency. DBWriter is an asynchronous (or no-wait) Essbase thread, which searches the cache finding information that needs to be written to a disk.

This table shows the cleanup state at the end of a transaction. Because the DBWriter only operates during idle times, measuring its activity can give you an idea of the amount of idle time. This number should be high, indicating that the DBWriter had enough idle time to support the database effectively. Keep these statistics available for diagnostic purposes, in case you need to call technical support.

Persistence/Scope of this table: **med/db**

Database Synchronous Input/Output Statistics

The Database Synchronous I/O table tracks synchronous input/output.

Synchronous means that the thread or program waits for the I/O to finish before proceeding. The **Tave (us)** column shows the bandwidth (bytes/Ttotal).

Persistence/Scope of this table: **med/db**

Table 3-8 DB Sync IO Statistics

DataBase Synch I/O	Count	Bytes	Ttotal (ms)	Tave (ms)
Index Read An occurrence of the OS reading index information from a .IND file on the disk.	Number of times the OS went to the disk to read a .IND file.	Number of bytes the OS read from .IND files.	Total amount of time the OS took to complete index reads.	Average amount of time the OS took to complete one index read. This equals Ttotal (ms)/Count.
Index Write An occurrence of the OS writing index information to a .IND file.	Number of times the OS wrote information to a .IND file.	Number of bytes the OS wrote to .IND files.	Total amount of time the OS took to complete index writes.	Average amount of time the OS took to complete one index write. This equals Ttotal (ms)/Count.

Table 3-8 (Cont.) DB Sync IO Statistics

DataBase Synch I/O	Count	Bytes	Ttotal (ms)	Tave (ms)
Data Read An occurrence of the OS reading information from a .PAG file on the disk.	Number of times the OS went to the disk to read to a .PAG file.	Number of bytes the OS read from .PAG files.	Total amount of time the OS took to complete data reads.	Average amount of time the OS took to complete one data read. This equals Ttotal (ms)/Count.
Data Write An occurrence of the OS writing data to a .PAG file.	Number of times the OS wrote information to a .PAG file.	Number of bytes the OS wrote to .PAG files.	Total amount of time the OS took to complete data writes.	Average amount of time the OS took to complete one data write. This equals Ttotal (ms)/Count.

> **Note:**
>
> Bandwidth = bytes/Ttotal. Average bandwidth = bytes/Tave.

Database Asynchronous Input/Output Statistics

The Database Asynchronous I/O table tracks asynchronous input/output.

Asynchronous means no-wait: the I/O happens at an unknown time, while the program does other things. The effective bandwidth for the application is determined by bytes/Twait.

Persistence/Scope of this table: **med/db**

Table 3-9 DB Async IO Statistics

DataBase Asynch I/O	Count	Bytes	Ttotal (ms)	Tave (ms)	Twait (ms)
Index Read An occurrence of the OS reading index information from a .IND file on the disk.	Number of times the OS went to the disk to read a .IND file.	Number of bytes the OS read from .IND files.	Time elapsed between request for an index read, and verification of its completion.	Average time elapsed between requests for index reads, and verification of their completion.	Wait time if the OS had not completed index reads at the time polled.
Index Write An occurrence of the OS writing index information to a .IND file.	Number of times the OS wrote information to a .IND file.	Number of bytes the OS wrote to .IND files.	Time elapsed between request for an index write, and verification of its completion.	Average time elapsed between requests for index writes and verification of their completion.	Wait time if the OS had not completed index writes at the time polled.
Data Read An occurrence of the OS reading information from a .PAG file on the disk.	Number of times the OS went to the disk to read to a .PAG file.	Number of bytes the OS read from .PAG files.	Time elapsed between request for a data read, and verification of its completion.	Average time elapsed between requests for data reads, and verification of their completion.	Wait time if the OS had not completed data reads at the time polled.

Table 3-9 (Cont.) DB Async IO Statistics

DataBase Asynch I/O	Count	Bytes	Ttotal (ms)	Tave (ms)	Twait (ms)
Data Write An occurrence of the OS writing data to a .PAG file.	Number of times the OS wrote information to a .PAG file.	Number of bytes the OS wrote to .PAG files.	Time elapsed between request for a data write, and verification of its completion.	Average time elapsed between requests for data writes and verification of their completion.	Wait time if the OS had not completed data writes at the time polled.

> **Note:**
>
> (1) Because asynchronous I/O is ideally no-wait, and happens at an unknown time, you cannot determine how long reads and writes actually took to complete. (2) You cannot determine the bandwidth (bytes per microsecond). Effective bandwidth, as seen by the application, is determined by bytes/Twait.

Dynamic Calc Cache Statistics

The **Dynamic Calc Cache table** table shows where blocks that are expanded to contain calculated members (BigBlks) are calculated: in dynamic calculator cache (DCC), or in regular memory (nonDCC).

By viewing the total number of big blocks allocated versus the maximum number of big blocks held simultaneously, and by analyzing block wait statistics, you can determine the efficiency of your dynamic calc cache configuration settings (including DYNCALCCACHEMAXSIZE).

Table 3-10 Dynamic Calc Cache Statistics

Dynamic Calc Cache Statistic	Description
BigBlks Alloced	The number of big block allocations that have been requested, so far, irrespective of where the system got the memory (DC cache or regular). For three queries Q1, Q2, and Q3 executed, requiring 25, 35, and 10 big blocks, respectively, BigBlks Alloced would be 70. This does not mean that Q1 needed all 25 blocks at the same time. It may have used some blocks for a while, then released some of them, and so on, until the query finished and released all remaining blocks (returned to DC cache or regular memory).
Max BigBlks Held	The maximum number of big blocks simultaneously held, so far. For each query Qi executed so far, there will be a number Ni, which gives the maximum number of big blocks that the query needed to have at the same time (includes both DCC and regular memory blocks). MaxBigBlksHeld under the Total column is the maximum over all values of Ni. The values under the DCC and non-DCC columns are similar except that they restrict themselves to the maximum blocks held in the respective portions of memory.

Table 3-10 (Cont.) Dynamic Calc Cache Statistics

Dynamic Calc Cache Statistic	Description
DCC Blks Waited	The number of dynamic calculator blocks that the system had to wait for.
DCC Blks Timeout	The number of times that Essbase timed out waiting for free space in the dynamic calculator cache.
DCC Max ThdQLen	The highest number of threads that were left waiting in queue for Dynamic Calc cache memory to be freed.

MaxL Script Example

The following MaxL script creates an output file of performance statistics tables.

```
/* to execute:
   essmsh scriptname username password
*/
login $1 $2;
spool on to 'c:\mxlouts\pstatsouts.txt';
alter database sample.basic set performance statistics enabled;
execute calculation
  'SET MSG ERROR;
   CALC ALL;'
on Sample.basic;
alter database sample.basic set performance statistics mode to medium
persistence server scope;
query database sample.basic get performance statistics kernel_io table;
alter database sample.basic set performance statistics mode to long
persistence database scope;
query database sample.basic get performance statistics kernel_cache table;
alter database sample.basic set performance statistics mode to medium
persistence database scope;
query database sample.basic get performance statistics end_transaction table;
query database sample.basic get performance statistics database_synch table;
query database sample.basic get performance statistics database_asynch table;
spool off;
logout;
```

MaxL Statements (Aggregate Storage)

Some MaxL statements are available specifically for Essbase applications and cubes that are in aggregate storage mode.

Click here for non-aggregate storage list

Some MaxL grammar is applicable only to aggregate storage mode, and some standard grammar is not applicable to aggregate storage mode. The following statements support aggregate storage application and database operations.

- alter application
- alter database

- alter filter
- alter object
- alter partition
- alter system
- alter tablespace
- alter trigger
- create application
- create database
- create filter
- create outline
- create partition
- create after-update trigger
- display application
- display calculation
- display database
- display filter
- display filter row
- display lock
- display object
- display partition
- display privilege
- display session
- display system
- display tablespace
- display trigger
- display variable
- drop application
- drop calculation
- drop database
- drop filter
- drop lock
- drop object
- drop partition
- drop trigger
- execute aggregate process
- execute aggregate build
- execute aggregate selection
- execute allocation

- export data
- export query_tracking
- grant
- import data
- import dimensions
- import query_tracking
- login
- logout (see MaxL Shell Commands)
- query application
- query database
- refresh outline
- refresh replicated partition

The MaxL grammar is case-insensitive. Semicolon statement-terminators are required when using the MaxL Shell. Key words of the MaxL grammar are represented in this document in lower-case. Terminals, represented in upper-case, are to be replaced by the appropriate names, numbers, privileges, or strings. For more information about components of MaxL statements, see MaxL Definitions.

> **Note:**
>
> Login is part of the separate command shell grammar, not the MaxL language itself.

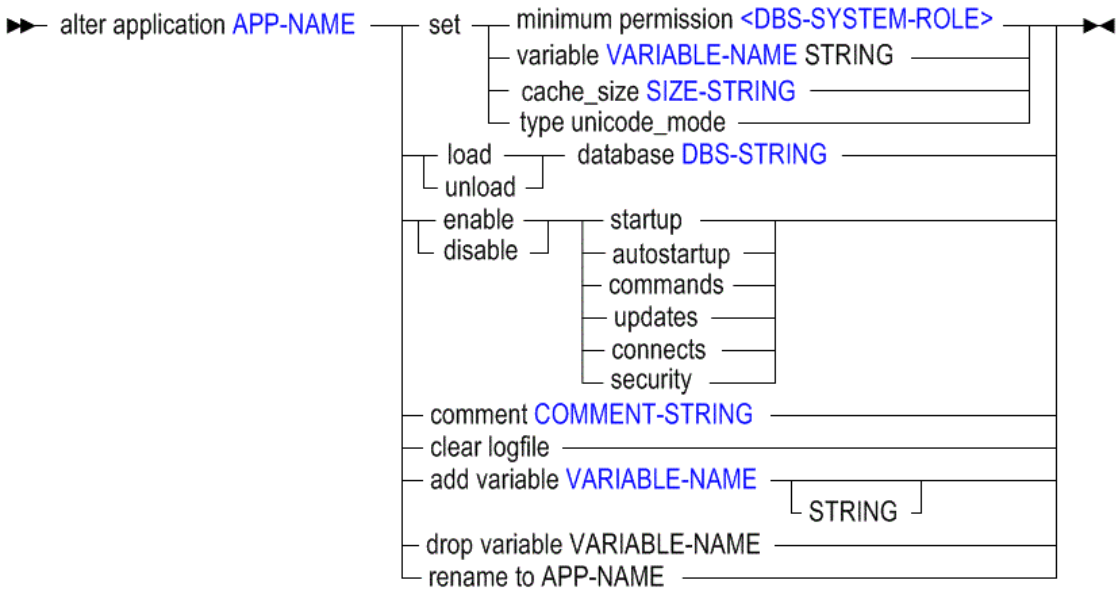
Alter Application (Aggregate Storage)

The MaxL alter application statement for ASO mode helps you change Essbase application-wide settings.

Click here for non-aggregate storage version

Permission required: Application Manager.

Syntax



- APP-NAME
- Database-Level System Roles
- VARIABLE-NAME
- SIZE-STRING
- DBS-STRING
- COMMENT-STRING
- VARIABLE-NAME

You can change the following application-wide settings using **alter application**.

Keywords

set minimum permission
Grant all users a minimum level of permission to all databases in the application. Users with higher permissions than this minimum are not affected.

set variable
Assign a string value to an existing substitution-variable name. If the variable does not exist, first create it using **add variable**. Substitution variables may be referenced by calculations in the application.

set cache_size
Set the maximum size to which the aggregate storage cache may grow. The aggregate storage cache grows dynamically until it reaches this limit. This setting takes effect after you restart the application. To check the currently set limit, use the following MaxL statement:

```
query application APP-NAME get cache_size;
```

If the ASODEFAULTCACHESIZE configuration setting is in use, either at application or server level, this MaxL statement has no effect.

set type unicode_mode
Migrate an application to Unicode mode. Migration to Unicode mode cannot be reversed.

load database
Start (by loading into memory) an idle database. The statement will fail if you do not have at least read privilege for the database.

unload database
Stop (by unloading from memory) an active database. The statement will fail if you do not have at least read privilege for the database.

enable startup
Permit all users to load (start) the application. This only applies to users who have at least read privilege for the application. Startup is enabled by default.

disable startup
Prevent all users from loading (starting) the application. Startup is enabled by default.

enable autostartup
Start the application automatically when Essbase Server starts. By default, autostartup is disabled.

disable autostartup
Do not start the application automatically when Essbase Server starts. By default, autostartup is disabled.

enable commands
Allow all users with sufficient permissions to make requests to databases in the application. Use to reverse the effect of **disable commands**. The disable commands setting remains in effect only for the duration of your session. By default, commands are enabled.

disable commands
Prevent all requests to databases in the application, including non-data-specific requests, such as viewing database information or changing database settings. All users are affected, including other administrators. Administrators are affected by this setting as a safety mechanism to prevent accidental updates to databases during maintenance operations. This setting remains in effect only for the duration of your session. The setting takes effect immediately, and affects users who are currently logged in, as well as users who log in later during your session.

> **Caution:**
>
> If performing maintenance operations that require disabling commands, you must make those maintenance operations within the same session and the same script as the one in which commands were disabled.

By default, commands are enabled.

enable updates
Allow all users with sufficient permissions to make requests to databases in the application. Use to reverse the effect of **disable updates**. Disabling updates remains in effect only for the duration of your session. By default, updates are enabled.

disable updates
Prevent all users from making requests to databases in the application. Use before performing update and maintenance operations. The disable updates setting remains in effect only for the duration of your session.

> **Caution:**
>
> If performing maintenance operations that require updates to be disabled, you must make those maintenance operations within the same session and the same script as the one in which updates were disabled. By default, updates are enabled.

enable connects
Allow all users with sufficient permissions to make connections to databases in the application. Use to reverse the effect of **disable connects**. By default, connections are enabled.

disable connects
Prevent any user with a permission lower than Application Manager from making connections to the databases that require the databases to be started. Database connections remain disabled for all databases in the application, until the application setting is re-enabled by the administrator.
By default, connections are enabled.

enable security
When security is disabled, Essbase ignores all security settings in the application and treats all users as Application Managers. By default, security is enabled.

disable security
When security is disabled, Essbase ignores all security settings in the application and treats all users as Application Managers. By default, security is enabled.

comment
Enter an application description (optional). The description can contain up to 80 characters.

clear logfile
Delete the application log located in the application directory. A new log is created for entries recording subsequent application activity.

add variable
Create an application-level substitution variable by name, and optionally assign a string value for the variable to represent. You can assign or change the value later using **set variable**. A substitution variable acts as a global placeholder for information that changes regularly. Substitution variables may be referenced by calculations and report scripts.
If substitution variables with the same name exist at server, application, and database levels, the order of precedence for the variables is as follows: a database level substitution variable supersedes an application level variable, which supersedes a server level variable.

drop variable
Remove a substitution variable and its corresponding value from the application.

rename to
Rename the application. When you rename an application, the application and the application directory (*ARBORPATH*\app*appname*) are renamed.

Example

```
alter application ASOsamp set cache_size 64MB;
```

Sets the maximum size of the aggregate storage cache to 64 MB.

```
alter application ASOsamp disable commands;
```

Prevents all users from making requests to the application scope. Use this statement before performing application-wide update and maintenance operations.

```
alter application ASOsamp comment 'Aggregate storage application';
```

Attaches a descriptive comment to the ASOsamp application.

Alter Database (Aggregate Storage)

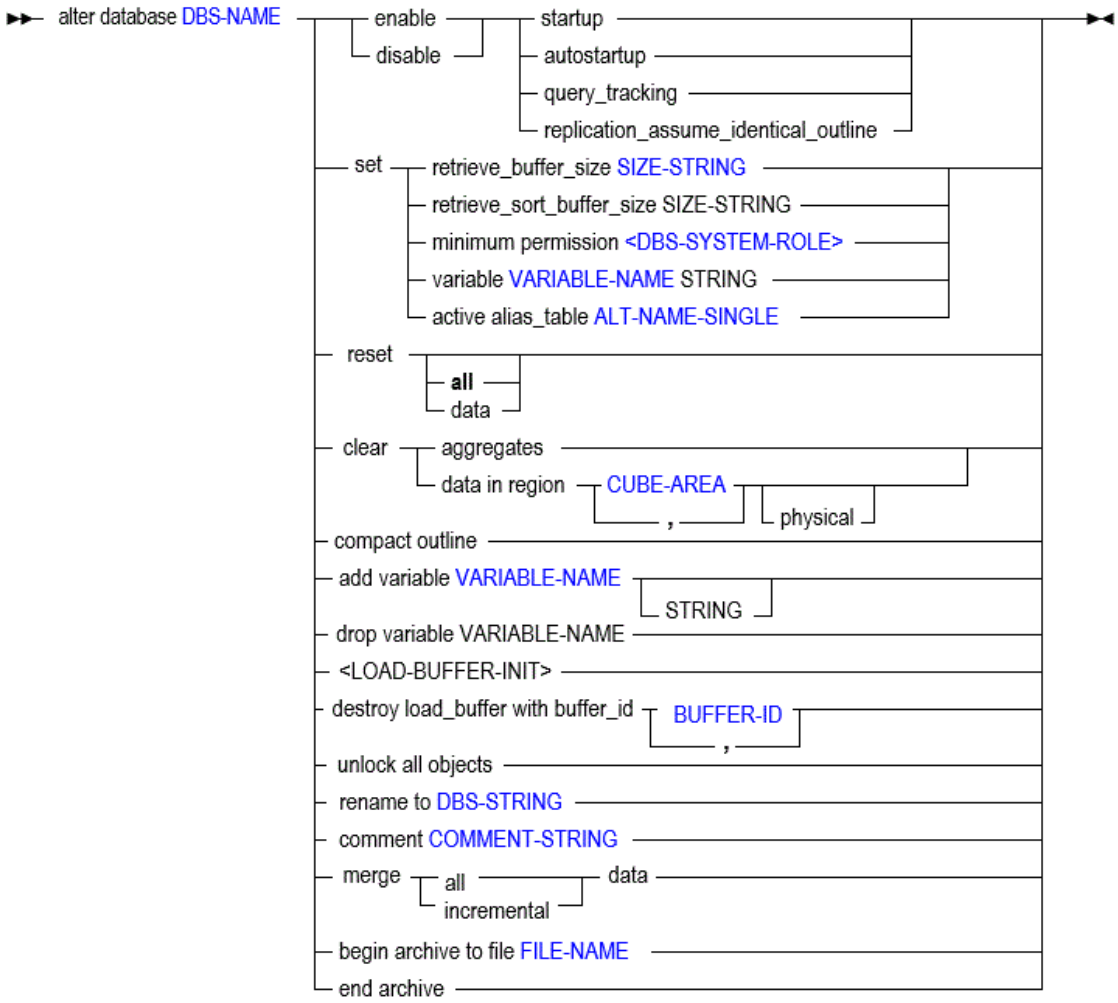
The MaxL alter database statement for ASO mode helps you change Essbase database-wide settings.

Click here for non-aggregate storage version

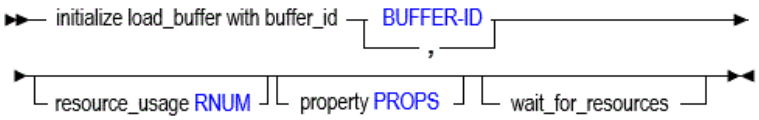
Change database-wide settings.

Permission required: create_application.

Syntax



<LOAD-BUFFER-INIT> ::=



- DBS-NAME
- DBS-SYSTEM-ROLE
- SIZE-STRING
- VARIABLE-NAME
- ALT-NAME-SINGLE
- CUBE-AREA
- BUFFER-ID
- RNUM
- PROPS
- DBS-STRING
- COMMENT-STRING

- FILE-NAME

You can change the following database-wide settings using **alter database**.

Keywords

enable startup
Enable users to start the database directly or as a result of requests requiring the database to be started. Startup is enabled by default.

disable startup
Prevent all users from starting the database directly or as a result of requests that would start the database. Startup is enabled by default.

enable autostartup
Automatically start the database when the application to which it belongs starts. Autostartup is enabled by default. This setting is applicable only when startup is enabled.

disable autostartup
Prevent automatic starting of the database when the application to which it belongs starts. Autostartup is enabled by default.

enable query_tracking
Begin collecting query data for this database, to be used for query-based view optimization. To utilize the results of query tracking, use the optional based on query_data grammar in any of the following statements:

- query database <dbs-name> list existing_views
- execute aggregate process
- execute aggregate selection

Query tracking is on by default. To verify that it's enabled, use `query database` *`appname`*`.`*`dbname`* `get cube_size_info`.

disable query_tracking
Stop collecting query data for query-based view optimization. Query tracking is on by default.

set retrieve_buffer_size
Change the database retrieval buffer size. This buffer holds extracted row data cells before they are evaluated by the RESTRICT or TOP/BOTTOM Report Writer commands. The default size is 10 KB. The minimum size is 2 KB. Increasing the size may improve retrieval performance.

set retrieve_sort_buffer_size
Change the database retrieval sort buffer size. This buffer holds data until it is sorted. The default size is 10 KB. The minimum size is 2 KB. Increasing the size may improve retrieval performance.

set minimum permission
Set a level of permission that all users or groups can have to the database. Users or groups with higher granted permissions than the minimum permission are not affected.

set variable
Change the value of an existing subsitution variable on the database. The value must not exceed 256 bytes. It may contain any character except a leading ampersand (&).

set active alias_table
Set an alias table as the primary table for reporting and any additional alias requests. Only one alias table can be used at a time. This setting is user-specific; it only sets the active alias table for the user issuing the statement.

reset
Clear all data and linked-reporting objects from the database, but preserve the outline.

> **Note:**
>
> If kernel queries are running when a clear data operation starts, the clear data operation waits for the kernel queries to complete and then the clear data operation proceeds. This information also applies to the reset all and reset data grammar.

reset all
Clear all data, Linked Reporting Objects, and the outline.

reset data
Same as using reset.

clear aggregates
Delete all aggregate views.

compact outline
Compact the outline file to decrease the outline file size. Compaction helps keeps the outline file at an optimal size. After the outline file is compacted, the file continues to grow as before, when members are added or deleted.

> **Note:**
>
> Compacting the outline does not cause Essbase to clear the data. When a member is deleted from the outline, the corresponding record of that member in the outline file is marked as deleted but the record remains in the outline file. Compacting the outline file does not remove the records of deleted members.

add variable
Create a database-level substitution variable by name, and optionally assign a string value for the variable to represent. You can assign or change the value later using set variable. A substitution variable acts as a global placeholder for information that changes regularly. Substitution variables may be referenced by calculations and report scripts.
If substitution variables with the same name exist at server, application, and database levels, the order of precedence for the variables is as follows: a database level substitution variable supersedes an application level variable, which supersedes a server level variable.

drop variable
Remove a substitution variable and its corresponding value from the database.

initialize load_buffer
Create a temporary buffer in memory for loading data.
Data load buffers are used in aggregate storage databases for allocations, custom calculations, and lock and send operations. Multiple data load buffers can exist on a single aggregate storage database.

You can control the share of aggregate storage cache resources the load buffer is allowed to use and how long to wait for resources to become available before aborting load buffer operations. You can also set properties that determine how missing and zero values, duplicate values, and multiple values for the same cell in the data source are processed.

- resource_usage
- property

destroy load_buffer
Destroy the temporary data-load memory buffer.

unlock all objects
Unlock all objects on the database that are in use by a user or process.

rename to
Rename the database. When you rename a database, the database directory is also renamed.

comment
Create a description of the database. The maximum number of characters is 80. This description is available to database administrators. To annotate the database for Smart View or other grid client users, use set note.

merge all|incremental data [remove_zero_cells]
Merge incremental data slices. Use these keywords:

- all—Merge all incremental data slices into the main database slice.
- incremental—Merge all incremental data slices into a single data slice. The main database slice is not changed.
- (Optional) remove_zero_cells—When merging incremental data slices, remove cells that have a value of zero (logically clearing data from a region results in cell with a value of zero).

clear data in region …
Clear the data in the specified region.
There are two methods for clearing data from a region:

- Physical, in which the input cells in the specified region are physically removed from the aggregate storage database. The process for physically clearing data completes in a length of time that is proportional to the size of the input data, not the size of the data being cleared. Therefore, you might typically use this method only when you need to remove large slices of data.

  For a physical clear, use the MaxL statement with the physical keyword:

  ```
  alter database appname.dbname clear data in region 'MDX set expression'
  physical;
  ```

  To save time, you can use a comma-separated list of *MDX set expressions* to clear from multiple physical regions.

  ```
  alter database ASOsamp.Basic clear data in region
   '{CrossJoin({[Promotions].[Coupon]},{[Time].[1st Half]}),
  ```

```
   CrossJoin({[Promotions].[Coupon]},{[Time].[2nd Half]})}'
physical;
```

- Logical, in which the input cells in the specified region are written to a new data slice with negative, compensating values that result in a value of zero for the cells you want to clear. The process for logically clearing data completes in a length of time that is proportional to the size of the data being cleared. Because compensating cells are created, this option increases the size of the database.

  For a logical clear, use the MaxL statement without the physical keyword:

  ```
  alter database appname.dbname clear data in region 'MDX set expression';
  ```

The region must be symmetrical. Members in any dimension in the region must be stored members. When physically clearing data, members in the region can be upper-level members in alternate hierarchies. (If the region contains upper-level members from alternate hierarchies, you may experience a decrease in performance.) Members cannot be dynamic members (members with implicit or explicit MDX formulas), nor can they be from an attribute dimension. For more information, see Clearing Data from Specific Regions of Aggregate Storage Databases.
To remove cells with a value of zero, use the **alter database** MaxL statement with the **merge** grammar and the **remove_zero_cells** keyword.

enable replication_assume_identical_outline
Optimize the replication of an aggregate storage database when the aggregate storage database is the target and a block storage database is the source and the two outlines are identical.
Replication optimization affects only the target aggregate storage application; the source block storage application is not affected. This functionality does not apply to block storage replication.

disable replication_assume_identical_outline
Do not optimize the replication of an aggregate storage database when the aggregate storage database is the target and a block storage database is the source and the two outlines are identical.

begin archive to file
Prepare the database for backup by an archiving program, and prevent writing to the files during backup.
Begin archive achieves the following outcomes:

- Switches the database to read-only mode. The read-only state persists, even after the application is restarted, until it is changed back to read-write using `end archive`.
- Creates a file containing a list of files that need to be backed up. Unless a different path is specified, the file is stored in the database directory.

Begin archive and end archive do not perform the backup; they simply protect the database during the backup process.

> **Note:**
>
> Using the **begin archive to file** and **end archive** grammar is the only supported way to backup and recover a database using MaxL.

end archive
Return the database to read-write mode after backing up the database files.

> **Note:**
>
> Using the **begin archive to file** and **end archive** grammar is the only supported way to backup and recover a database using MaxL.

Example

```
alter database ASOsamp.Basic clear aggregates;
```

Deletes all aggregate views in the ASOsamp.Basic database.

```
alter database ASOsamp.Basic initialize load_buffer with buffer_id 1;
```

See Loading Data Using Buffers.

```
alter database ASOsamp.Basic initialize load_buffer with buffer_id 1
resource_usage .5 property ignore_missing_values, ignore_zero_values;
```

Creates a data-load buffer in memory for the ASOsamp.Basic database. The buffer can use only 50% of available resources. Missing values and zeros in the data source are ignored.

```
alter database ASOsamp.Basic disable query_tracking;
```

Turns off the harvesting of query data for the ASOsamp.Basic database.

```
alter database ASOsamp.Basic merge all data;
```

Merges all incremental data slices into the main slice in the ASOsamp.Basic database.

```
alter database ASOsamp.Basic merge incremental data;
```

Merges all incremental data slices into a single data slice within the ASOsamp.Basic database.

```
alter database ASOsamp.Basic merge all data remove_zero_cells;
```

Merges all incremental data slices into the main slice in the ASOsamp.Basic database, and removes cells with a value of zero.

```
alter database ASOsamp.Basic clear data in region '{Jan, Budget}';
```

Clears all Budget data for the month of Jan, using the logical method, from the ASOsamp.Basic database.

```
alter database ASOsamp.Basic clear data in region '{Jan, Budget}' physical;
```

Clears all Budget data for the month of Jan, using the physical method, from the ASOsamp.Basic database.

```
alter database ASOsamp.Basic clear data in region '{CrossJoin({[Promotions].
[Coupon]},{[Time].[1st Half]}), CrossJoin({[Promotions].[Coupon]},{[Time].
[2nd Half]})}' physical;
```

Clears two physical regions from the ASOsamp.Basic database.

```
alter database ASOsamp.Basic clear data in region 'CrossJoin({Jan},
{Forecast1, Forecast2})';
```

Clears all January data for the Forecast1 and Forecast2 scenarios from the ASOsamp.Basic database.

Alter System (Aggregate Storage)

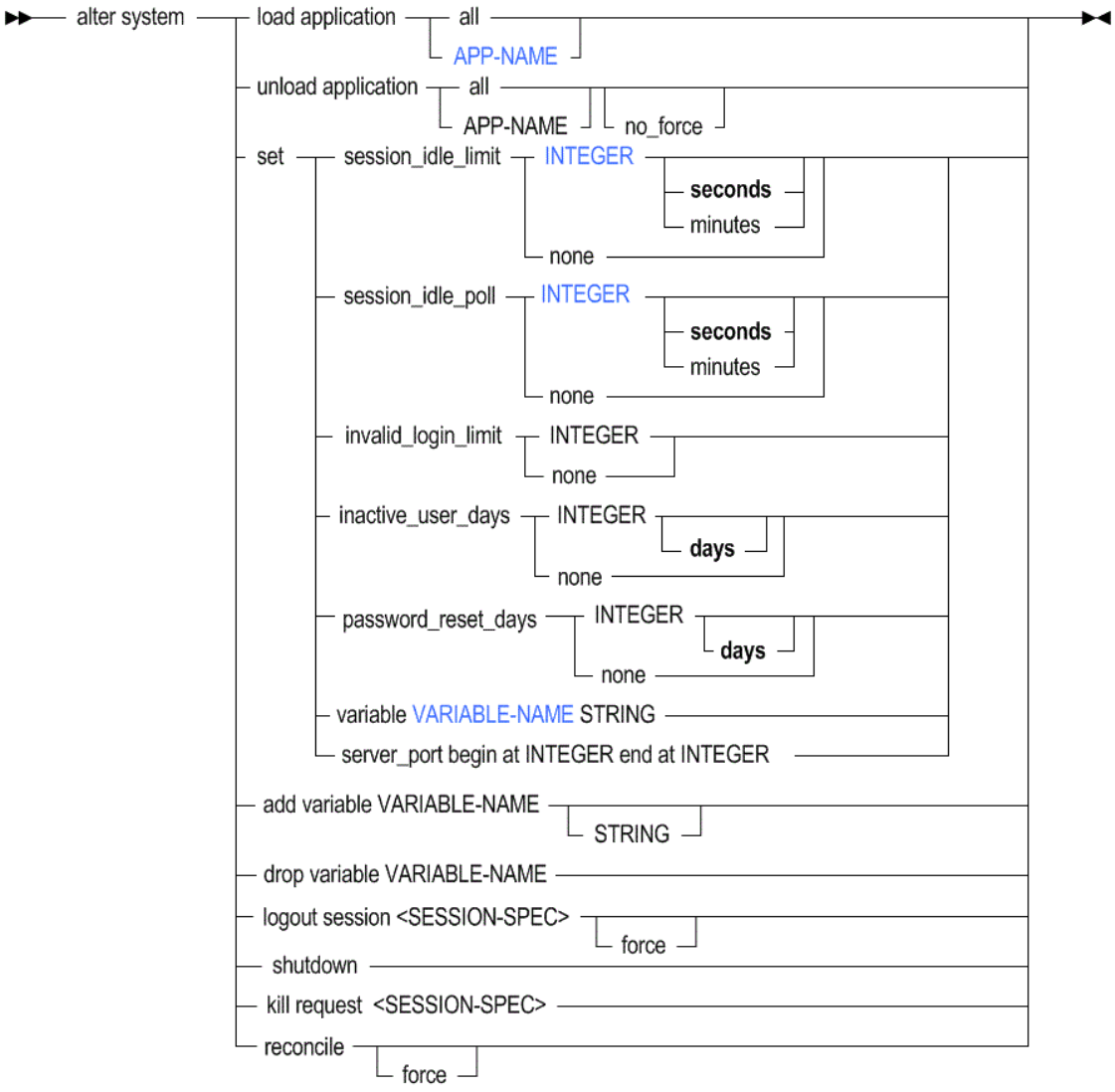
The MaxL alter system statement for ASO mode helps you change the state of the Essbase Server.

Click here for non-aggregate storage version

Use this statement to start and stop applications, manipulate system-wide variables, manage password and login activity, disconnect users, kill processes, and shut down the server.

Permission required: Administrator.

Syntax



- APP-NAME
- INTEGER
- VARIABLE-NAME

You can change the following system-wide settings using **alter system**.

Keywords

load application
Start an application, or start all applications on the Essbase Server.

unload application
Stop an application, or stop all applications on the Essbase Server. Unloading an application cancels all active requests and database connections, and stops the application. If Essbase encounters a problem when trying to cancel active requests and database connections, and stopping the application, an error is logged in the application log.
If you do not want to stop an application if it has active requests and database connections, use the **no_force** grammar. When using **no_force**:

- If the application has active requests and database connections, the application is not stopped; it continues running
- If the application does not have active requests and database connections, the application is stopped, as if you used **unload application** without specifying **no_force**

> **Note:**
>
> Unloading an application cancels all active requests and database connections, and stops the application, unless you explicitly specify otherwise using the *no_force* option. The *no_force* option causes Essbase to return an error if active requests are running on the application.
> An internal logic error [200] is logged when a database is unable to shut down gracefully when unloading an application or shutting down the system while a process is running on the database.

set session_idle_limit
Set the interval of time permitted for a session to be inactive before Essbase Server logs off the user. The minimum limit that you can set is five minutes (or 300 seconds). When the session idle limit is set to **none**, all users can stay logged on until the Essbase Server is shut down.
The default user idle logout time is 60 minutes. When a user initiates a calculation in the background, after 60 minutes the user is considered idle and is logged out, but the calculation continues in the background.
Because the user may mistakenly assume that the calculation stopped because he or she was logged out, you can do one of the following to correct the user experience:

- Run the calculation in the foreground
- Increase the session idle limit in to a time that exceeds the duration of the calculation, or to none

set session_idle_poll
Set the time interval for inactivity checking. The time interval specified in the session idle poll tells Essbase how often to check whether user sessions have passed the allowed inactivity interval indicated by `session_idle_limit` in the **alter system** statement.

set invalid_login_limit
Set the number of unsuccessful login attempts allowed by any user before the user account becomes disabled. When you change this setting, the counter resets to 0. When the invalid login limit is set to **none**, there is no limit. By default, there is no limit.

set inactive_user_days
Set the number of days a user account may remain inactive before the system disables it. The counter resets when the user logs in, is edited, or is activated by an administrator. When the inactive days limit is set to **none**, user accounts remain enabled even if they are not used. By default, there is no limit.

set password_reset_days
Set the number of days users may retain passwords. After the allotted number of days, users are prompted at login to change their passwords. The counter resets for a user when the user changes the password, is edited, or is activated by an administrator. When the password reset days limit is set to **none**, there is no built-in limit for password retention. By default, there is no limit.

set variable
Change the value of an existing subsitution variable on the system. The value must not exceed 256 bytes. It may contain any character except a leading ampersand (&).

set server_port
Expand a port range specified in Essbase configuration properties. Each Essbase application uses two ports from this range. If no more ports are available, an error message is displayed.

> **Note:**
>
> You can expand port ranges only so that the beginning port range is less than SERVERPORTBEGIN and the ending port range is greater than SERVERPORTEND.

add variable
Create a system-level substitution variable by name, and optionally assign a string value for the variable to represent. You can assign or change the value later using **set variable**. A substitution variable acts as a global placeholder for information that changes regularly. Substitution variables may be referenced by calculations and report scripts.
If substitution variables with the same name exist at server, application, and database levels, the order of precedence for the variables is as follows: a database-level substitution variable supersedes an application-level variable, which supersedes a server-level variable.

drop variable
Remove a substitution variable and its corresponding value from the system.

logout session all
Terminate all user sessions currently running on the Essbase Server.

logout session...force
Terminate a session (or sessions) even if it is currently processing a request. The request is allowed to proceed to a safe point, and then the transaction is rolled back.

logout session <session-id>
Terminate a session by its unique session ID number. To see the session ID number, use display session.

logout session by user
Terminate all current sessions by a particular user, either across the entire Essbase Server, or limited to a specific application or database.

logout session by user on application
Terminate all current sessions by a particular user across a specific application.

logout session by user on database
Terminate all current sessions by a particular user across a specific database.

logout session on application
Terminate all current user sessions across a specific application.

logout session on database
Terminate all current user sessions across a specific database.

shutdown
Shut down the Essbase Server.

kill request all
Terminate all current requests on the Essbase Server.

> **Note:**
>
> To terminate your own active request in MaxL Shell, press the ESC key.

kill request <session-id>
Terminate the current request indicated by the session ID. You can obtain session IDs using display session.

kill request by user
Terminate all current requests by the specified user on the Essbase Server.

kill request on application
Terminate all current requests on the specified application.

kill request on database
Terminate all current requests on the specified database.

reconcile
No longer applicable.

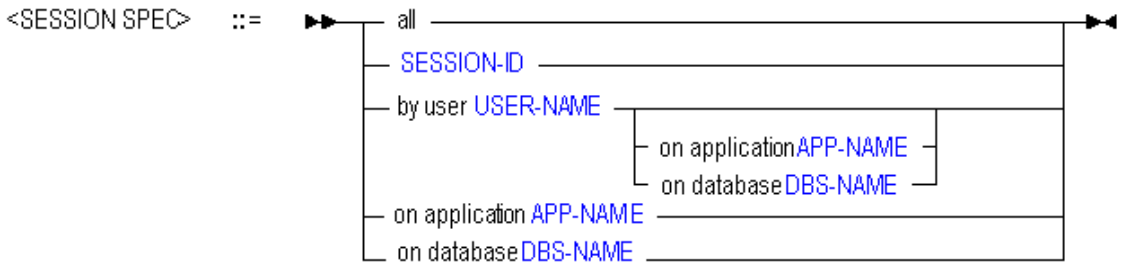
Notes

SESSION SPECIFICATION

A *session* is a single user connection to Essbase Server. The session can be identified by keywords and names indicating context, or by a unique session ID number.

A *request* is a query sent to Essbase Server by a user or by another process; for example, starting an application or restructuring a database outline. Only one request at a time can be processed in each session.

If a session is processing a request at the time that an administrator attempts to terminate the session, the administrator must either terminate the request first, or use the **force** keyword available with **alter system** to terminate the session *and* the current request.



Example

```
alter system unload application Sample;
```

Stops the Sample application, if it is currently running.

```
alter system unload application all;
```

Terminates all active requests and stops all applications.

```
alter system unload application Sample no_force;
```

Essbase prepares to unload the Sample application; however, if active requests are running, the application is not stopped.

```
alter system shutdown;
```

Stops all running applications and shuts down Essbase Server.

```
alter system logout session by user Fiona;
```

Disconnects Fiona from any applications or databases to which she is connected.

To log out a user, log out the sessions owned by that user.

```
alter system set password_reset_days 10;
```

Specifies that all users will be prompted after 10 days to change their passwords. The day count for any user is reset when the user changes the password or is edited or reactivated by an administrator.

```
alter system unload application Sample;
```

Alter Tablespace (Aggregate Storage)

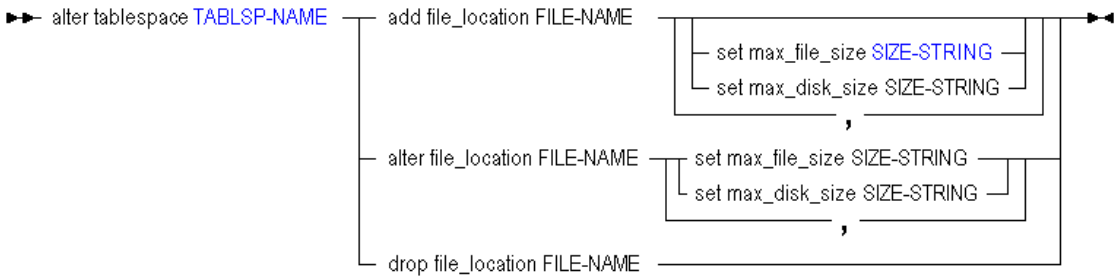
The MaxL alter tablespace statement helps you change details about a tablespace for an Essbase aggregate storage database.

To see a list of tablespaces, use display tablespace. You cannot change the location or size of the `metadata` and `log` tablespaces.

Tablespaces are applicable only to aggregate storage cubes.

Permission required: Application Manager.

Syntax



- TABLSP-NAME
- SIZE-STRING

Use **alter tablespace** to edit tablespaces in the following ways:

Keywords

add file_location
Add a new file location to the tablespace.

> **Note:**
>
> FILE-NAME is case sensitive in this statement.

alter file_location
Change the maximum file-size or disk-size value for the specified file location.

> **Note:**
>
> FILE-NAME is case sensitive in this statement.

set max_file_size
Specify a value for the maximum size that a data file may attain before Essbase creates a new file.
The largest possible value that the aggregate storage kernel can handle is 134217727 MB. This is also the default value. If operating system limits take effect before this value is reached, the kernel creates a new file. If you enter a value that is larger than 134217727 MB, the kernel ignores the setting and caps file size at 134217727 MB.
The minimum value is 8MB (8388608b), and any values you enter are rounded up to the next 8MB interval.

> **Note:**
>
> Some operating system platforms may enforce a maximum file size limit.

set max_disk_size
Specify the value for the maximum amount of disk space to be allocated to the file location.
The largest possible value that the aggregate storage kernel can handle is 4294967295 MB. This is also the default value. If operating system limits take effect before this value is

reached, the kernel attempts to use another file location in the tablespace. If you enter a value that is larger than 4294967295 MB, the kernel ignores the setting and caps disk size at 4294967295 MB.
The minimum value is 8MB (8388608b), and any values you enter are rounded up to the next 8MB interval.

drop file_location
Delete the specified file location from the tablespace. When a file location is deleted, all files in the file location are deleted, as well as the subdirectory containing the files. You cannot delete a file location if it contains data. You cannot delete the tablespace itself.

> **Note:**
>
> FILE-NAME is case sensitive in this statement.

Notes

- This statement requires the application to be started.
- On Windows, you can specify tablespace file locations using Uniform Naming Convention (UNC) syntax, which is `\\ComputerName\SharedFolder\Resource`. Including the escape characters required by MaxL Shell, the UNC file name specification would look like the following:

  ```
  '\\\\ComputerName\\SharedFolder\\Resource'
  ```

Example

```
alter tablespace ASOsamp.'default' add file_location 'C:\\mytablespace' set
max_file_size 50mb;
```

Adds another file location for the `default` tablespace. Now the tablespace `default` is in `C:\mytablespace` in addition to the original location, `C:\Hyperion\products\Essbase\EssbaseServer\app`.

```
alter tablespace ASOsamp.'default' alter file_location 'C:\\Hyperion\
\products\\Essbase\\EssbaseServer\\' set max_file_size 50mb;
```

Changes the maximum file size allowed in the specified location of the default tablespace. Note that the file_location string is case sensitive.

```
alter tablespace ASOsamp.'default' alter file_location '\\\\ComputerName\
\SharedFolder\\Resource' set max_file_size 50mb;
```

Changes the maximum file size allowed in the specified location of the default tablespace. The file_location string is specified using UNC.

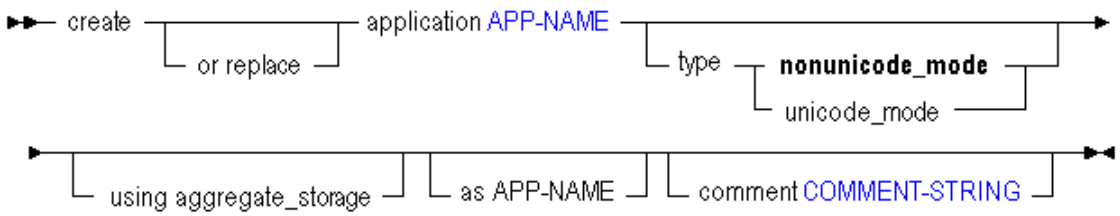
Create Application (Aggregate Storage)

The MaxL create application statement for ASO mode helps you create or re-create an Essbase application, either from scratch or as a copy of another application on the same server.

Click here for non-aggregate storage version

See APP-NAME for information on the maximum length of and special characters that are allowed in an application name. Application names are not case-sensitive.

Syntax



- APP-NAME
- COMMENT-STRING

You can create an application in the following ways using the aggregate storage version of **create application**.

Keywords

create application
Create a new application. Application names are not case-sensitive.

create or replace application
Create an application, or replace an existing application of the same name. Application names are not case-sensitive.

...type nonunicode_mode
Create a Non Unicode-mode application. This is also the default if these keywords are omitted.

...type unicode_mode
Create a Unicode-mode application.

...using aggregate_storage
Create an application using an aggregate storage model. Only one database per application is allowed. Selecting to use aggregate storage model for an application is non-reversible.
Use the aggregate storage model if the following is true for your database:

- The database is sparse and has many dimensions, or a large hierarchical depth of members in the dimensions.
- The database is used primarily for read-only purposes; there are few or no data updates.
- There are no formulas on the outline except in the dimension tagged as Accounts.

- Calculation of the database is frequent and highly aggregational, with no dependency on calculation scripts.

create application as
Create an application as a copy of another application. Application names are not case-sensitive.
You cannot copy block storage applications to aggregate storage applications or vice versa. The copy will always use the same storage as the original. However, you can convert an outline from a block storage database to an aggregate storage database, using create outline. Before you copy an aggregate storage application, you must merge all incremental data slices into the main database slice. Data in unmerged incremental data slices is not copied.

comment
Create an application description (optional). The description can contain up to 80 characters.

Example

```
create application Sample2 using aggregate_storage comment 'aggregate storage
application.';
```

Creates a new aggregate storage application called Sample2, with an associated comment.

Create Database (Aggregate Storage)

The MaxL create database statement for ASO mode helps you create or re-create an aggregate storage Essbase cube, optionally as a copy of another on the same server.

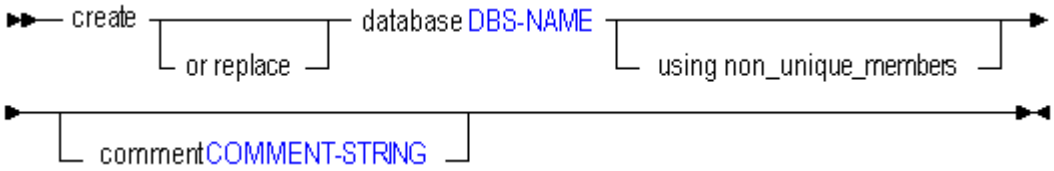
Click here for non-aggregate storage version

See DBS-NAME for information on the maximum length of and special characters that are allowed in a database name. Database names are not case-sensitive.

The syntax for creating an aggregate storage database is the same as for creating a block storage database. You must create an aggregate storage database as part of an aggregate storage application.

Permission required: Application Manager.

Syntax



- DBS-NAME
- COMMENT-STRING

Use **create database** to create a database in the following ways:

Keywords

create database
Create a new database. Database names are not case-sensitive.

create or replace database
Create a database, or replace an existing database of the same name. Database names are not case-sensitive.

create database using non_unique_members
Create a database that supports the use of duplicate member names. Once you have created a database with a duplicate member outline, you cannot convert it back to a unique member outline.
For more information about duplicate member names, see Creating and Working With Duplicate Member Outlines.

comment
Create a database description (optional). The description can contain up to 80 characters.

Notes

- You cannot create an aggregate storage database as a copy of another aggregate storage database. Only one aggregate storage database is allowed per application.
- You cannot copy a block storage database to an aggregate storage database. For an example of how to create an aggregate storage application and database based on a block storage application and database, see Creating an Aggregate Storage Sample Using MaxL.

Example

```
create or replace database Sample.Basic comment 'This is a test.';
```

Creates a database called Basic within the Sample application. If a database named Basic within the Sample application already exists, it is overwritten.

Create Outline (Aggregate Storage)

The MaxL create outline statement for ASO mode helps you create an aggregate storage Essbase outline based on an existing block storage outline.

The outline you are creating must be for an aggregate storage cube that is local to your current login session. The block-storage cube you are using as a source can be remote. If a remote host is specified, you can also specify a user name and password if the connection is remote.

Permission required: Database Manager.

Essbase supports the following scenarios for converting block storage outlines to aggregate storage outlines:

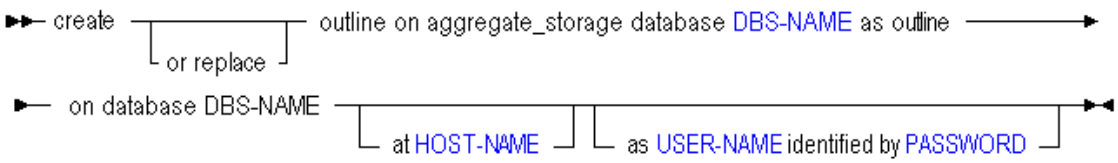
- Non-Unicode block storage outline to non-Unicode aggregate storage outline
- Non-Unicode block storage outline to Unicode aggregate storage outline
- Unicode block storage outline to Unicode aggregate storage outline

The following conversion scenarios are not supported:

- Unicode block storage outline to non-Unicode aggregate storage outline

- Aggregate storage outline to a block storage outline

Syntax



- DBS-NAME
- HOST-NAME
- USER-NAME
- PASSWORD

You can create an outline in the following ways using **create outline**.

Keywords

create outline...
Create an aggregate-storage cube outline based on a block storage outline. If an outline of the same name already exists, it is replaced.

create or replace outline...
This statement has the same result as `create outline` above.

at HOST-NAME
If the block-storage cube you are using as a source is remote, specify its discovery URL. For example, `"https://myEssbase-myDomain.analytics.us2.example.com/essbase/agent"`

as USER-NAME identified by PASSWORD
If the block-storage cube you are using as a source is remote, specify the location. If the connection is also remote (requires a different authentication), provide the user name and password, as you would do when creating a remote partition.

Example

```
create or replace outline on aggregate_storage database Sample2.Basic2 as
outline on database sample.basic;
```

Creates an aggregate storage outline based on the Sample.Basic outline. For a complete example of how to create an aggregate storage version of a block storage cube, see Creating an Aggregate Storage Sample Using MaxL.

Display Tablespace (Aggregate Storage)

The MaxL display tablespace statement for ASO mode helps you view details about a tablespace belonging to an Essbase aggregate storage database.

Tablespaces are applicable only to aggregate storage cubes.

Permission required: Application Manager.

This statement requires the application to be started.

Syntax

TABLSP-NAME

Example

```
set column_width 50; /* so file_location will not be truncated */
display tablespace ASOsamp.'default';
```

This example displays the following output:

Table 3-11 Display Tablespace MaxL Output Columns

Column Header	Contents
file_location	C:\Hyperion\products\Essbase\EssbaseServer\APP\
max_file_size	56
max_disk_size	4294967295

Execute Aggregate Build (Aggregate Storage)

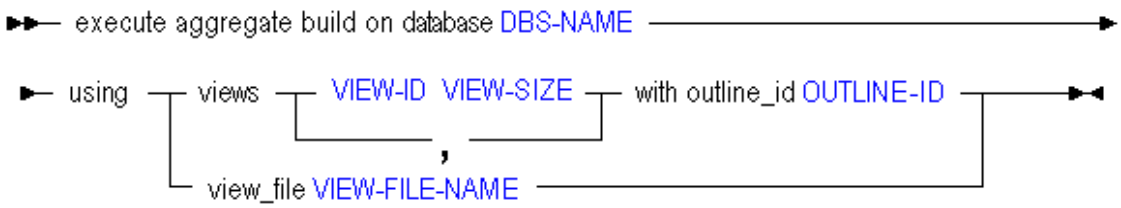
The MaxL execute aggregate build statement helps you perform an aggregation on an Essbase aggregate storage cube, based on selected views.

Minimum permission required: Application Manager

The views to build must either be identified by their view IDs, obtained previously using execute aggregate selection, or by a view selection saved in an aggregation script.

You can also configure Essbase to generate aggregate views automatically. For more information about aggregate views, see Aggregating an Aggregate Storage Database.

Syntax



- DBS-NAME
- VIEW-ID
- VIEW-SIZE
- OUTLINE-ID
- VIEW-FILE-NAME

You can materialize aggregations in the following ways using **execute aggregate build**.

Keywords

using views...
Builds an aggregation based on a previously selected view (or views) and the associated outline ID.

using view_file...
Builds an aggregation based on a saved view selection stored in an aggregation script. Omit the `.csc` file extension from the view file name when you issue the **execute aggregate build** statement.

Notes

- Although it is possible to pass arbitrary view-id and view-size arguments, this practice is not supported.
- Passing view-size arguments other than those returned by the **execute aggregate selection** command may cause unpredictable results.

Example

```
execute aggregate build on database ASOSamp.Basic using views 711 0.00375
with outline_ID 4142187876;
```

Builds an aggregation of the ASOSamp.Basic cube. The build is based on the view of an aggregate storage outline (identified as 4142187876) having the view ID `711`, and a view size of 0.00375.

```
execute aggregate build on database ASOSamp.Basic using view_file myView;
```

Builds an aggregation of the ASOSamp.Basic database based on the view saved in the aggregation script `myView.csc`.

Related Topics

- Execute Aggregate Process (Aggregate Storage)
  The MaxL execute aggregate process statement helps you perform an aggregation on an Essbase aggregate storage cube.
- Execute Aggregate Selection (Aggregate Storage)
  The MaxL execute aggregate selection statement helps you select views of an Essbase aggregate storage cube, based on various criteria.

Execute Aggregate Process (Aggregate Storage)

The MaxL execute aggregate process statement helps you perform an aggregation on an Essbase aggregate storage cube.

Minimum permission required: Application Manager

Use this statement to perform an aggregation. Optionally, you can specify the maximum disk space for the resulting files. Optionally, you can base the view selection on user querying patterns.

This statement applies to aggregate storage cubes only.

This statement enables you to build aggregate views with a minimum of settings. If greater control is needed, you can combine the following statements:

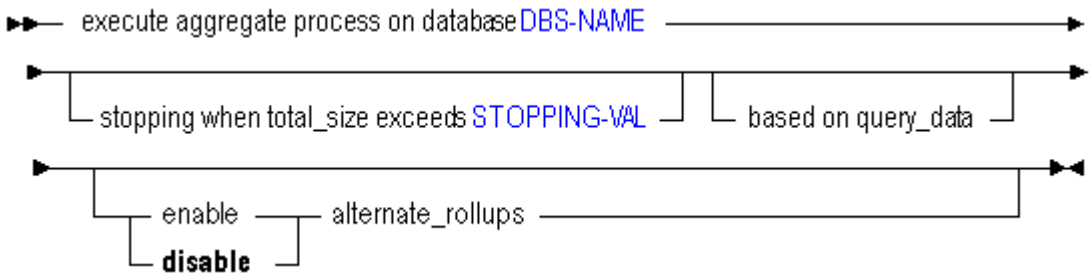
- Execute Aggregate Selection (Aggregate Storage)
- Execute Aggregate Build (Aggregate Storage)

This statement causes Essbase to:

1. Select 0 or more aggregate views based on the stopping value and/or on querying patterns, if given.
2. Build the views that were selected.

You can also configure Essbase to generate aggregate views automatically. For more information about aggregate views, see Aggregating an Aggregate Storage Database.

Syntax



- DBS-NAME
- STOPPING-VAL

You can aggregate an aggregate storage database in the following ways using **execute aggregate process**.

Keywords

stopping when total_size exceeds...
Aggregate whichever views Essbase selects, with the exception that the maximum growth of the aggregated cube must not exceed the given ratio. For example, if the size of a cube is 1 GB, specifying the total size as 1.2 means that the size of the resulting data cannot exceed 20% of 1 GB, for a total size of 1.2 GB.

based on query_data
Aggregate whichever views Essbase selects, based on collected user querying patterns. This option is only available if query tracking is turned on, using alter database with the **enable query_tracking** grammar.

enable|disable alternate_rollups
If enabled, secondary hierarchies (with default level usage) are considered for view selection. Default: disabled (no secondary hierarchies are considered).

Notes

View selection (step 1) can be performed independently of aggregation by using execute aggregate selection. Aggregation (step 2) can be performed without built-in view selection by using execute aggregate build.

Example

```
execute aggregate process on database ASOsamp.Basic
stopping when total_size exceeds 1.3;
```

Selects and builds an aggregation of the ASOsamp.Basic cube that permits the cube to grow by no more than 30% as a result of the aggregation.

```
execute aggregate process on database ASOsamp.Basic based on query_data;
```

Selects and builds an aggregation of the ASOsamp.Basic cube, where the views that Essbase selects for aggregation are based on the most frequently queried areas of the cube.

Related Topics

- Execute Aggregate Build (Aggregate Storage)
  The MaxL execute aggregate build statement helps you perform an aggregation on an Essbase aggregate storage cube, based on selected views.
- Execute Aggregate Selection (Aggregate Storage)
  The MaxL execute aggregate selection statement helps you select views of an Essbase aggregate storage cube, based on various criteria.

Execute Aggregate Selection (Aggregate Storage)

The MaxL execute aggregate selection statement helps you select views of an Essbase aggregate storage cube, based on various criteria.

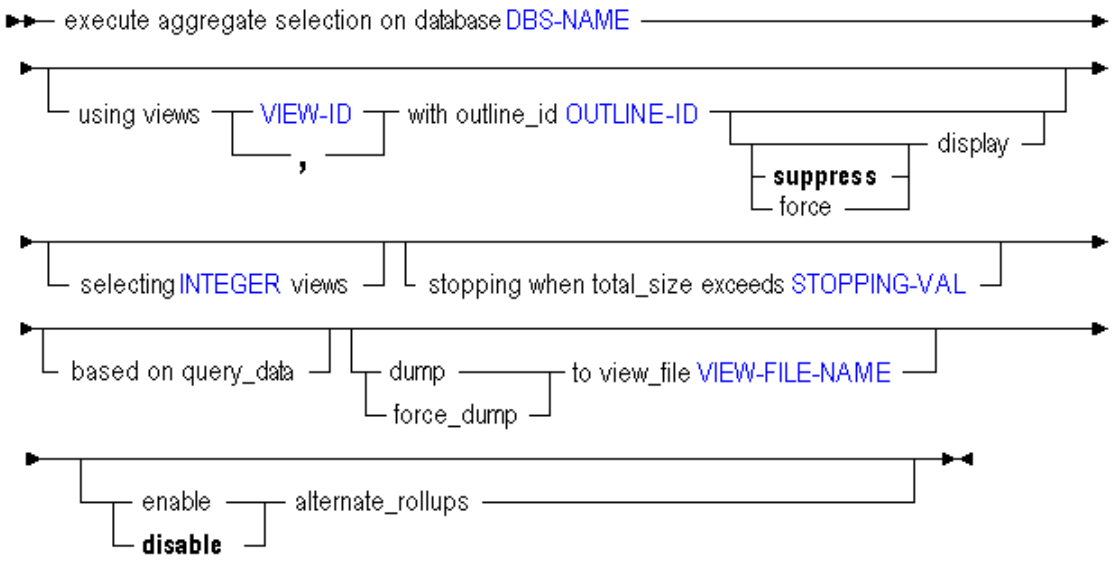
Minimum permission required: Application Manager

After you use this statement to select views, you use the resultant table or aggregation script to build an aggregation (materialize a view) using execute aggregate build.

> **Note:**
>
> View selection and aggregation can be performed by Essbase in a single step by using execute aggregate process. However, the use of the two separate statements **execute aggregate selection** and **execute aggregate build** enables you more control of the selection criteria.

You can also configure Essbase to generate aggregate views automatically. For more information about aggregate views, see Aggregating an Aggregate Storage Database.

Syntax



- DBS-NAME
- OUTLINE-ID
- VIEW-ID
- INTEGER
- STOPPING-VAL
- VIEW-FILE-NAME

You can select views in the following ways using **execute aggregate selection**.

Keywords

using views...with outline_ID
Selects views based on pre-selected view IDs. The view IDs are obtained from previous executions of the statement.

using views...with outline_ID...force display
Selects views based on pre-selected view IDs, including the pre-selected views IDs themselves.

using views...with outline_ID...suppress display
Selects views based on pre-selected view IDs, skipping the pre-selected views IDs themselves. This is the default behavior even if the **suppress** keyword is omitted.

selecting <INTEGER> views
Selects the number of views based on whether the number of views specified in <INTEGER> is greater than or equal to, or less than, the recommended number of default views that are returned by the **execute aggregate selection** statement. By default, Essbase determines the recommended number of default views.
Assume that <RECNUM> represents the recommended number of default views:

- If the value of <INTEGER> is greater than or equal to the value of <RECNUM>, the selected number of views equals <RECNUM>.

  For example, if <INTEGER> equals 20 and <RECNUM> equals 15, the number of selected number of views equals 15.

- If the value of <INTEGER> is less than the value of <RECNUM>, the number of views that are selected equals <INTEGER>.

  If you want the number of views that are selected to equal the value of <INTEGER>, use the **stopping when total_size exceeds <STOPPING-VAL>** grammar to change the number of recommended default views that are returned by the **execute aggregate selection** statement. Define the <STOPPING-VAL> factor large enough so that the number of default views that are returned by **execute aggregate selection** is greater than the value of <INTEGER>.

  For example, if <INTEGER> equals 20 and <RECNUM> equals 50, the number of selected number of views equals 20.

> **Note:**
>
> This parameter does not create views.

stopping when total_size exceeds <STOPPING-VAL>
Selects views, specifying a storage stopping value in terms of a factor times the size of the unaggregated input (level 0) values. For example, a stopping value of 1.5 means that the view selection should permit the cube to grow by no more than 50% as a result of the aggregation.

based on query_data
Selects views based on previously collected query-tracking data. You must have already enabled query tracking. After enabling query tracking, allow sufficient time to collect user data-retrieval patterns before performing an aggregate selection based on query data.
Query tracking records information about every query executed on the cube, so that it can be used as a basis for view selection. Query-based view selection helps to improve query performance when the distribution of user queries is skewed.
For every level combination, the cost of retrieving cells is recorded. The recording continues until the application is shut down or until the recording is explicitly turned off using **alter database <dbs-name> disable query_tracking**. In both cases, all the query cost data is discarded, and the recording stops (and will not continue when the application starts again). All query cost data becomes invalid when additional views are built.
To create views based on tracked query patterns,

1. If needed, enable query tracking using **alter database <dbs-name> enable query_tracking**. Query tracking is on by default.
2. Run all production queries once, and then select the first set of views based on the query cost data. To select the views, run this MaxL statement (**execute aggregate selection… based on query_data…**).
3. Build the selected aggregate view using **execute aggregate build**.
4. Repeat the previous two steps at least twice. Selecting and building multiple views iteratively helps ensure there are enough usage-tracking data to form a pattern. Each new view you build decreases the rate at which query costs grow.

dump to view_file
Saves the view selection to an aggregation script. If the specified script name already exists, an error is returned. To overwrite an existing script, use the **force_dump** keyword.
The aggregation script contains information derived during the aggregate view selection. You can materialize the aggregation at a different time by running the aggregation script. For example:`execute aggregate build on database <dbs-name> using view_file <view-file-name>`

force_dump to view_file
Saves the view selection to an aggregation script. If the specified script name already exists, the **force_dump** keyword causes it to be overwritten.

enable|disable alternate_rollups
If enabled, secondary hierarchies (with default level usage) are considered for view selection. Default: disabled (no secondary hierarchies are considered).

Example

```
execute aggregate selection on database ASOsamp.Basic;
```

Performs the default view selection for ASOsamp Basic. This statement selects the same views as `execute aggregate process on database ASOsamp.Basic` would build.

```
execute aggregate selection on database ASOsamp.Basic using views 711, 8941
with outline_ID 4142187876;
```

Selects views based on the pre-selected view IDs. The view IDs are obtained from previous executions of the statement.

```
execute aggregate selection on database ASOsamp.Basic using views 711, 8941
with outline_ID 4142187876 force display;
```

Selects views based on the pre-selected view IDs. **force display** is used to include the pre-selected views (711 and 8941) in the new selection.

```
execute aggregate selection on database ASOsamp.Basic stopping when
total_size exceeds 1.2;
```

Selects an aggregation of the ASOsamp Basic cube that, when built, would permit the cube to grow by no more than 20% as a result of the aggregation.

```
execute aggregate selection on database ASOsamp.Basic based on query_data;
```

Selects views based on previously collected query-tracking data. You must have enabled query tracking using **alter database <dbs-name> enable query_tracking**.

```
execute aggregate selection on database ASOsamp.Basic
dump to view_file myView;
```

Selects a default aggregation of the ASOsamp Basic cube, saving the selection to `APP\DB\myView.csc`. You can materialize the view later by running the aggregation script `myView.csc`. For example:

```
execute aggregate build on database ASOsamp.Basic using view_file
'myView.csc';
```

Related Topics

- Execute Aggregate Build (Aggregate Storage)
  The MaxL execute aggregate build statement helps you perform an aggregation on an Essbase aggregate storage cube, based on selected views.
- Execute Aggregate Process (Aggregate Storage)
  The MaxL execute aggregate process statement helps you perform an aggregation on an Essbase aggregate storage cube.

Execute Allocation (Aggregate Storage)

The MaxL execute allocation statement for ASO mode helps you allocate one or more given source amounts to a target range of cells in an Essbase aggregate storage database.

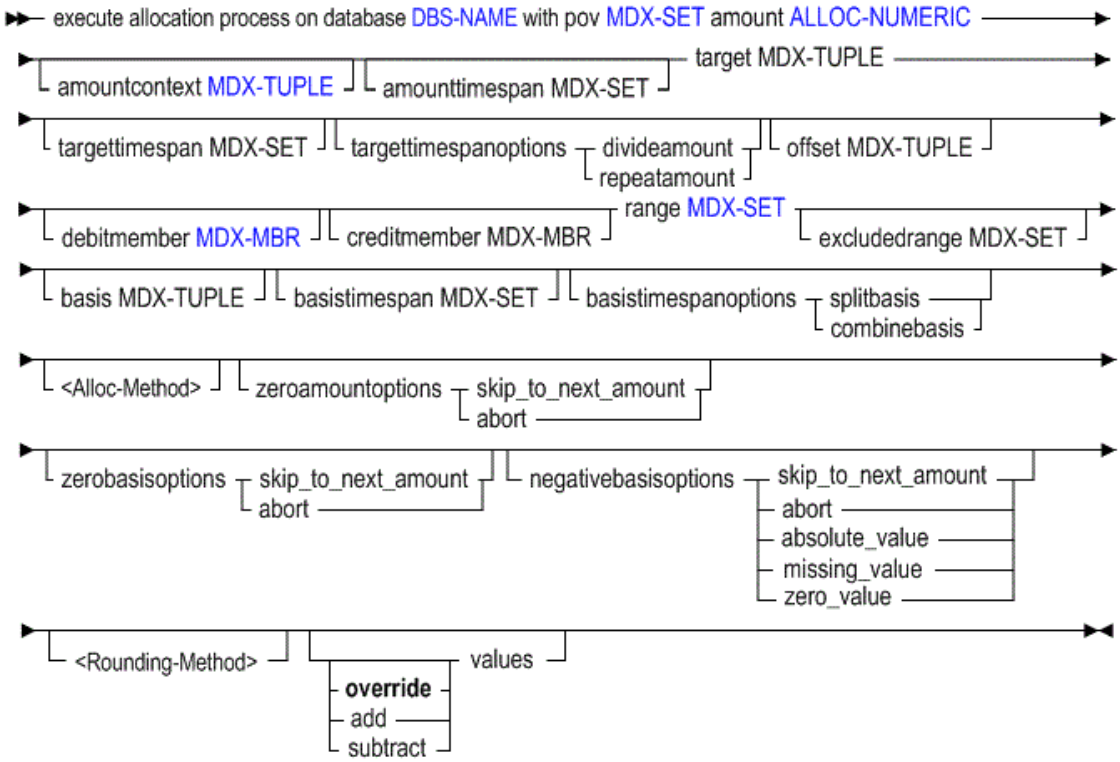
The source amount can be allocated to the target proportionately to a given basis, or the source amount can be spread evenly to the target region.

Allocations are typically used in the budgeting process to distribute revenues or costs.

Minimum permission required: Execute.

For more information about allocations and to understand the input parameters, see Performing Custom Calculations and Allocations on Aggregate Storage Databases.

Syntax



- DBS-NAME
- MDX-SET
- ALLOC-NUMERIC
- MDX-TUPLE
- MDX-MBR

Keywords

pov <mdx-set>
Required. Provide an MDX set defining the context region in which the allocation is performed.

amount <alloc-numeric>
Required. Provide an MDX numeric value expression indicating the amount to be allocated.

amountcontext <mdx-tuple>
Optional. Provide an MDX tuple with one member from each dimension missing from **pov** and **amount**. This clause is required when **amount** is an arithmetic expression and **pov** does not specify two or more dimensions. It should not be used otherwise.

amounttimespan <mdx-set>
Optional. Provide an MDX set indicating one or more time periods to be considered for the amount. The amount value is aggregated over the specified time periods, and the aggregated amount value is allocated. Time periods must be level 0 members in a Time dimension.

target <mdx-tuple>
Required. Provide an MDX tuple defining the database region where results are written.

targettimespan <mdx-set>
Optional. Provide an MDX set indicating one or more time periods to be considered for the target. Time periods must be level 0 members in a Time dimension.

targettimespanoptions
Optional, but required if `targettimespan` is used.
Select a method for allocating values across the target time span:

- `divideamount`–Divide the amount evenly across the time periods
- `repeatamount`–Repeat the amount across the time periods

offset <mdx-tuple>
Optional. If offsetting entries are used, provide an MDX tuple defining the location in the database where an offsetting value is written for each source amount.

debitmember <mdx-mbr>
Optional. If double-entry accounting is used, provide an MDX member expression indicating the member to which positive result values are written.

creditmember <mdx-mbr>
Optional. If double-entry accounting is used, provide an MDX member expression indicating the member to which negative result values are written.

range <mdx-set>
Required. Provide an MDX set indicating the database region in which allocated values are calculated and written.

excludedrange <mdx-set>
Optional. Provide an MDX set specifying locations in the range where you do not want allocation values written.

basis <mdx-tuple>
Required in most cases. Provide an MDX tuple that, when combined with the range, defines the location of basis values that determine how the amount is allocated. The basis can consist of upper-level or level 0 members.
Optional if the allocation method used is **spread**, and no values are skipped; required otherwise. Basis must be omitted when the allocation method **spread** is used without **skip** options.

basistimespan <mdx-set>
Optional. Provide an MDX set that indicates one or more time periods to be considered for the basis. Time periods must be level 0 members in a Time dimension.

basistimespanoptions
Optional, but required if **basistimespan** is used. Select a method for using the basis time span:

- `splitbasis`–Use the basis value for each time period individually
- `combinebasis`–Use the sum of the basis values across the time periods specified by **basistimespan**

share
Optional. Specify to allocate the amount(s) proportionately to the basis values. For syntax, see Allocation Method Specification in Notes.

spread
Optional. Specify to allocate the amount(s) evenly. For syntax, see Allocation Method Specification in Notes. You can include one or more of the following skip options when using spread allocation:

- `skip_missing`–Skip missing basis values
- `skip_zero`–Skip zero basis values
- `skip_negative`–Skip negative basis values

zeroamountoptions
Optional. If omitted, zero or #MISSING amount values are allocated. Otherwise, specify treatment of amount values that are zero or #MISSING:

- `skip_to_next_amount`–Skip to the next nonzero, non-#MISSING amount value
- `abort`–Cancel the entire allocation operation

zerobasisoptions
Optional. For **share**, this option specifies the action when the sum of all basis values is zero. For **spread**, this option specifies the action when all the basis values are skipped. Select one of the following options:

- `skip_to_next_amount`–Skip to the next nonzero, non-#MISSING amount value
- `abort`–Cancel the entire allocation operation

round
Optional. Specify rounding options. The following options are available:

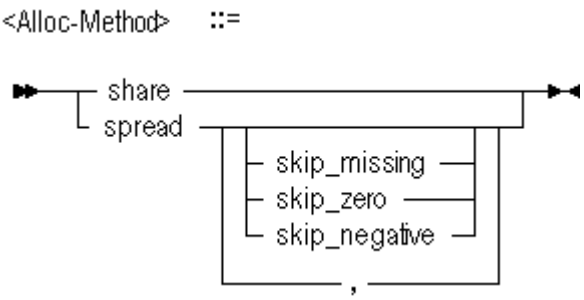
- Round to a specified number of decimal places, using an integer or MDX numeric value expression. The value must be between 100 and -100, and is truncated if it is not a whole number.
- Perform rounding, but discard rounding errors
- Add rounding errors to the highest allocated value
- Add rounding errors to the lowest allocated value
- Provide an MDX tuple indicating a cell to which the rounding error should be added

override|add|subtract values
Optional. Generated allocation values can be added to (or subtracted from) existing values, instead of overwriting them. Overwriting is the default.
When performing custom allocations on an aggregate storage cube with a federated partition, you can only override existing values. You cannot add to, nor subtract from, existing values.

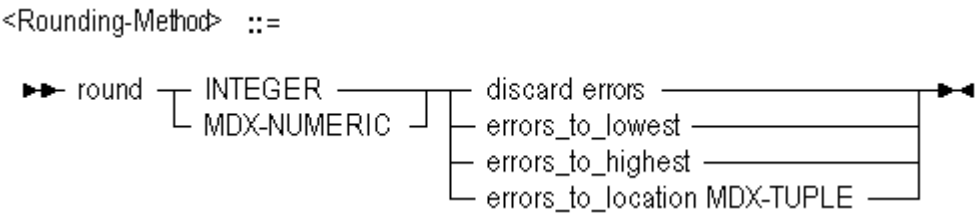
Notes

- The clauses following the **with** keyword can be entered in any order, each separated by white space.
- Each clause can only be entered once.
- The **pov**, **amount** , **target**, **range**, and **basis** clauses are mandatory; the others are optional.
- You can specify only stored, level-0 members in all of the clauses except for **amount**, **amountcontext**, **basis**, and the number of rounding digits; for all other arguments, do not use upper-level members, attribute members, or dynamic calc members.

Allocation Method Specification



Rounding Method Specification



Example

The following statement executes an allocation.

```
execute allocation process on database glrpt.db with
pov             "Crossjoin({[VisionUS]},
                Crossjoin({[5740]},
                  Crossjoin({[USD]},
                    Descendants([Geography],[Geography].Levels(0)))))"
amount          "Jan + Feb"
amountcontext    "([100], [Beginning Balance], [Actual], [CostCenter1])"
target          "([Allocation], [CostCenter1])"
offset          "([Allocation], [CostCenter1], [100], [YearNA])"
debitmember      "[Debit]"
creditmember     "[Credit]"
range          "Crossjoin(Descendants([999], [Department].Levels(0)),
           Descendants([Year], [Year].Levels(0)))"
excludedrange     "{[9994], [9995], [9996]}"
basis          "([SQFT], [Balance], [Actual], [CostCenter2])"
share
zeroamountoptions    abort
zerobasisoptions  abort
negativebasisoptions  zero_value
targettimespanoptions  divideamount
round            "Currency.CurrentMember.CurrencyPrecision"
errors_to_location     "([101], [Jan])"
add values;
```

Execute Calculation (Aggregate Storage)

The MaxL execute calculation statement for ASO mode helps you run a custom calculation script for an Essbase aggregate storage database.

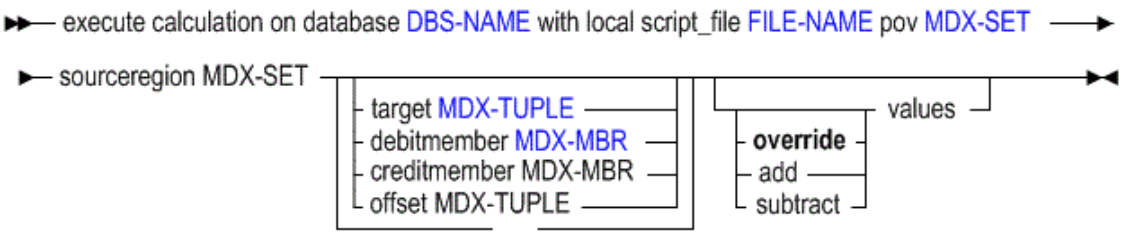
Click here for non-aggregate storage version

Use this statement to execute a custom calculation script expressed in MDX, specifying the script file, source region, and point of view (POV). Optionally specify the target, offset, and debit or credit members.

Minimum permission required: Database Update.

For more information about custom calculation script parameters, see Performing Custom Calculations and Allocations on Aggregate Storage Databases.

Syntax



- DBS-NAME
- FILE-NAME
- MDX-SET
- MDX-TUPLE
- MDX-MBR

You can execute custom calculations with the following options:

Keywords

local script_file
Required. Run the specified local calculation script file. Custom calculation scripts are expressed in MDX. The following is an example of a custom calculation script, `script.txt`.

```
(AccountA,Proj1) := 100;
([AccountB], [Proj1]) := ([AccountB], [Proj1]) * 1.1;
(AccountC,Proj1) :=
    ((AccountB,Proj1,2007) + (AccountB, Proj1)) / 2;
(AccountA,Proj2) :=
    ((AccountD,Proj1) +
      (AccountB,Proj2)) / 2;
```

For information about writing custom calculation scripts, see Performing Custom Calculations and Allocations on Aggregate Storage Databases.

pov <mdx-set>
Required. Provide an MDX set defining the context region in which the calculation is performed. The calculation script will be executed once for every cross-product in the POV region.

sourceregion <mdx-set>
Required. Provide an MDX set specifying the region of the cube referred to by the formulas in the script. At a minimum, the source region should include all members from the right-hand sides of the assignment statements in the custom calculation script.

target <mdx-tuple>
Optional. Provide an MDX tuple defining the database region where results are written. You can use only stored, level-0 members in the tuple; do not use upper-level members, attribute members, or dynamic calc members.

debitmember <mdx-mbr>
Optional. If double-entry accounting is used, provide an MDX member expression indicating the member to which positive result values are written. You can specify only stored, level-0 members; do not use upper-level members, attribute members, or dynamic calc members.

creditmember <mdx-mbr>
Optional. If double-entry accounting is used, provide an MDX member expression indicating the member to which negative result values are written. You can specify only stored, level-0 members; do not use upper-level members, attribute members, or dynamic calc members.

offset <mdx-tuple>
Optional. If offsetting entries are used, provide an MDX tuple defining the location in the database where an offsetting value for each source amount is written. You can use only stored, level-0 members in the tuple; do not use upper-level members, attribute members, or dynamic calc members.

override|add|subtract values
Optional. Generated calculation values can be added to (or subtracted from) existing values, instead of overwriting them. Overwriting is the default.

Notes

- Each clause can only be entered once.
- The **script_file**, **pov**, and **sourceregion** clauses are mandatory; the others are optional.
- The optional clauses following the **sourceregion** specification can be entered in any order, each separated by white space.
- You can specify only stored, level-0 members on the left side of the assignment statement in the custom calculation script; do not use upper-level members, attribute members, or dynamic calc members.
- You can specify only stored, level-0 members in the following clauses: DebitMember, CreditMember, Target, and Offset.

Example

The following statement executes `script.txt` referenced above. For a sample use case, see Performing Custom Calculations and Allocations on Aggregate Storage Databases.

```
execute calculation on database app.db with
  local script_file "script.txt"
  POV "Crossjoin({[VisionUS]},
```

```
  Crossjoin({[101]},
    Crossjoin ({[Jan]},
      Crossjoin({[Scenario]},
        Descendants(Geography, Geography.Levels(0))))))"
SourceRegion "Crossjoin({[AccountB], [AccountD]},
  Crossjoin({[Proj1], [Proj2]}, {[2007]}))"
Target "(Allocation)"
DebitMember "[BeginningBalance_Debit]"
CreditMember "[BeginningBalance_Credit]"
Offset  "([Account_000], [Project_000])"
add values;
```

Export Data (Aggregate Storage)

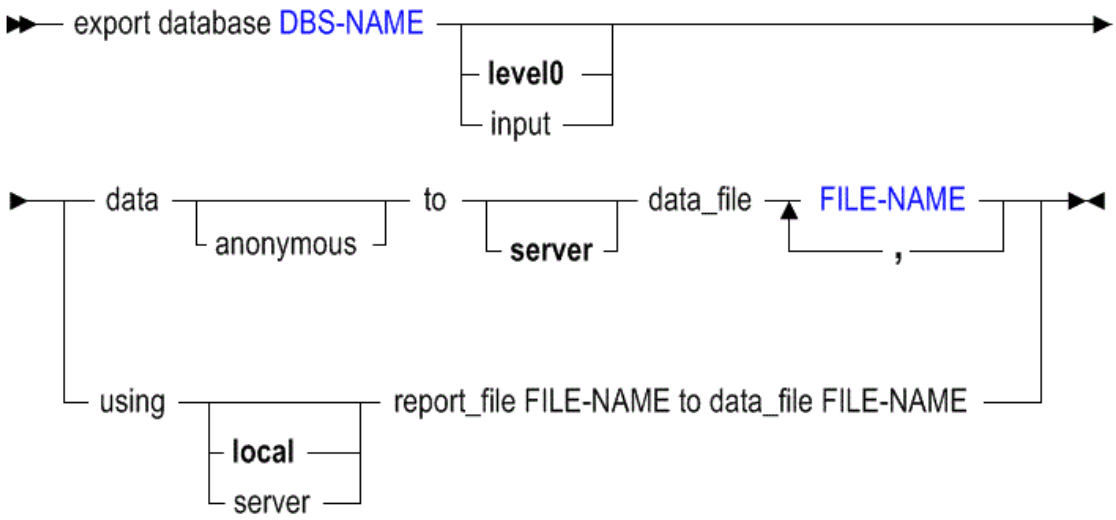
The MaxL export data statement for ASO mode helps you export data from an Essbase aggregate storage database.

Click here for non-aggregate storage version

Use this statement to export level-0 data, which does not include calculated values, from an aggregate storage cube. Export data files are written to the cube directory, unless an alternate path is specified using FILEGOVPATH configuration. To use Report Writer, export the data using a report file.

Minimum permission required: Database Access.

Syntax



- DBS-NAME
- FILE-NAME

On aggregate storage databases, use **export data** to export in the following ways:

Keywords

export database <dbs-name> level0 data...
Export level-0 input data to a text file. You cannot export aggregates, upper level data, or data from dynamically calculated members.

> **Note:**
>
> Exporting data does not clear the data from the database.

export database <dbs-name> input data...
This statement performs the same action as **export database <dbs-name> level0 data**....

export database <dbs-name> ... data anonymous
Export data in anonymized format. Anonymization removes the risk of sensitive data disclosure, and can be used in case sample data needs to be provided for technical support. Essbase replaces real data values with `1`, for each value in the block.

export database <dbs-name> ...using...report_file...
Run a stored report script, exporting a subset of the database.

Notes

- This statement requires the database to be started.
- Exports on aggregate storage databases are limited as follows:
  - You can export level-0 data only (level-0 data is the same as input data in aggregate storage databases).
  - You cannot perform upper-level data export on an aggregate storage database.
  - You cannot perform columnar export on an aggregate storage database.
  - To export data in parallel, specify a comma-separated list of export files, from 1 to 8 file names. This number should generally be equal to the number of processors on the machine that you wish to commit to doing parallel export. The number of threads Essbase uses typically depends on the number of file names you specify. However, on a very small aggregate storage database with a small number of data blocks, it is possible that only a single file will be created (in effect, performing serial export), even though parallel export to multiple files is requested. In this case, the export file name will be the first file name given as input.
  - During a data export, the export process allows users to connect and perform read-only operations.
  - If the data for a thread exceeds 2 GB, Essbase may divide the export data into multiple files with numbers appended to the file names.

    The naming convention for additional export files is as follows: `_1`, `_2`, etc. are appended to the additional file names. If the specified output file name contains a period, the numbers are appended before the period. Otherwise, they are appended at the end of the file name.

    For example, if the given file name is `exportfile.txt`, the next additional file is `exportfile_1.txt`.

Example

Example 1

The following example exports all level 0 data from ASOsamp.Basic to an export file.

```
export database ASOsamp.Basic data to server data_file 'myfilesamp.txt';
```

> The export location is the cube directory (`ASOSamp/Basic/myfilesamp.txt`), or whichever Essbase Server directory the administrator has specified for FILEGOVPATH.

Example 2

The following example uses a report script, `Bottom.rep`, to export a subset of sorted data from ASOsamp.Basic to an output file, `Bottom.rpt`.

```
export database ASOsamp.Basic using report_file 'Bottom.rep' to data_file
'Bottom.rpt';
```

Sample Report Script and Output

For example 2, assume that `Bottom.rep` is the following report script file based on ASOsamp.Basic:

```
//Bottom.rep
<Sym
<Column (Measures, Years)
<Row (Geography, Products)
<ICHILDREN Geography
<ICHILDREN Products
<Bottom (3, @DataColumn(1))
    !
```

The report script produces the following report (`Bottom.rpt`):

```
Measures Years Time Transaction Type Payment Type Promotions Age Income Level
Stores

North East       All Merchandise  43,250,241
                   Products       43,250,241
                 High End Mercha~ 11,379,402
South            All Merchandise  32,790,838
                   Products       32,790,838
                 High End Mercha~ 8,436,598
  Geography      All Merchandise  76,041,079
                   Products       76,041,079
                 High End Mercha~ 19,816,000
```

Export Query Tracking (Aggregate Storage)

The MaxL export query_tracking statement for ASO mode helps you export query tracking data from an Essbase aggregate storage cube to a text file.

Query tracking captures user retrieval statistics against an aggregate storage cube, enabling Essbase to make view-based optimizations to improve the performance of aggregations.

When an aggregate storage cube is refreshed or restarted, query data is not persisted in the cube. As an optimization technique, before refreshing or restarting, you can export query tracking data to a text file. To rebuild aggregate views after a refresh or restart, import the query tracking data from the text file. Essbase uses the query data to select the most appropriate set of aggregate views to materialize.

Before exporting query tracking data, query tracking must be enabled and working.

Query tracking is enabled by default for aggregate storage cubes. To check whether it's enabled, you can confirm by running the following MaxL statement (example is for ASOSamp Basic cube):

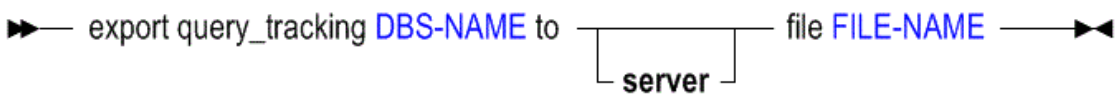
```
query database ASOSamp.Basic get cube_size_info;
```

If you need to enable query tracking, use the alter database (aggregate storage) statement with the **enable query_tracking** grammar.

The MaxL export query_tracking statement for ASO mode helps you export query tracking data from an Essbase aggregate storage database to a text file. Do not edit the text file with the exported query data.

Permission required: Database Manager.

Syntax



- DBS-NAME
- FILE-NAME

You can use **export query_tracking** in the following ways.

Keywords

export query_tracking <dbs-name> to server file...
Export query data from the specified aggregate storage cube to the specified file. Unless the administrator has specified a different export location, the file is created in the *<Application Directory>*/app/*appname*/*dbname* folder. If you do not know where *<Application Directory>* is in your environment, refer to Environment Locations in the Essbase Platform.

export query_tracking <dbs-name> to file...
You can omit the **server** keyword, but the result is the same.

> **Note:**
>
> Query tracking and query tracing are different.
>
> Query *tracking* enables you to capture user retrieval statistics against an aggregate storage cube, so that Essbase can make view-based optimizations to improve the performance of aggregations. It is on by default. Related MaxL statements include:
>
> ```
> import query_tracking
> export query_tracking
> alter database enable query_tracking
> query database appname.dbname get cube_size_info
> ```
>
> Query *tracing* helps you monitor Essbase query performance metrics for block storage cubes (including hybrid mode). It is off by default. If you enable it, Essbase logs metrics in a trace report. Related configuration parameters: TRACE_REPORT, QUERYTRACE, QUERYTRACETHRESHOLD, LONGQUERYTIMETHRESHOLD.

Example

```
export query_tracking ASOsamp.Basic to server file
'query_data_aso_sample.txt';
```

Exports query data from the ASOsamp.Basic database to the named file. The export location is the cube directory (`ASOSamp/Basic/`), or whichever Essbase Server directory the administrator has specified for FILEGOVPATH.

See Also

Import Query Tracking (Aggregate Storage)

Import Data (Aggregate Storage)

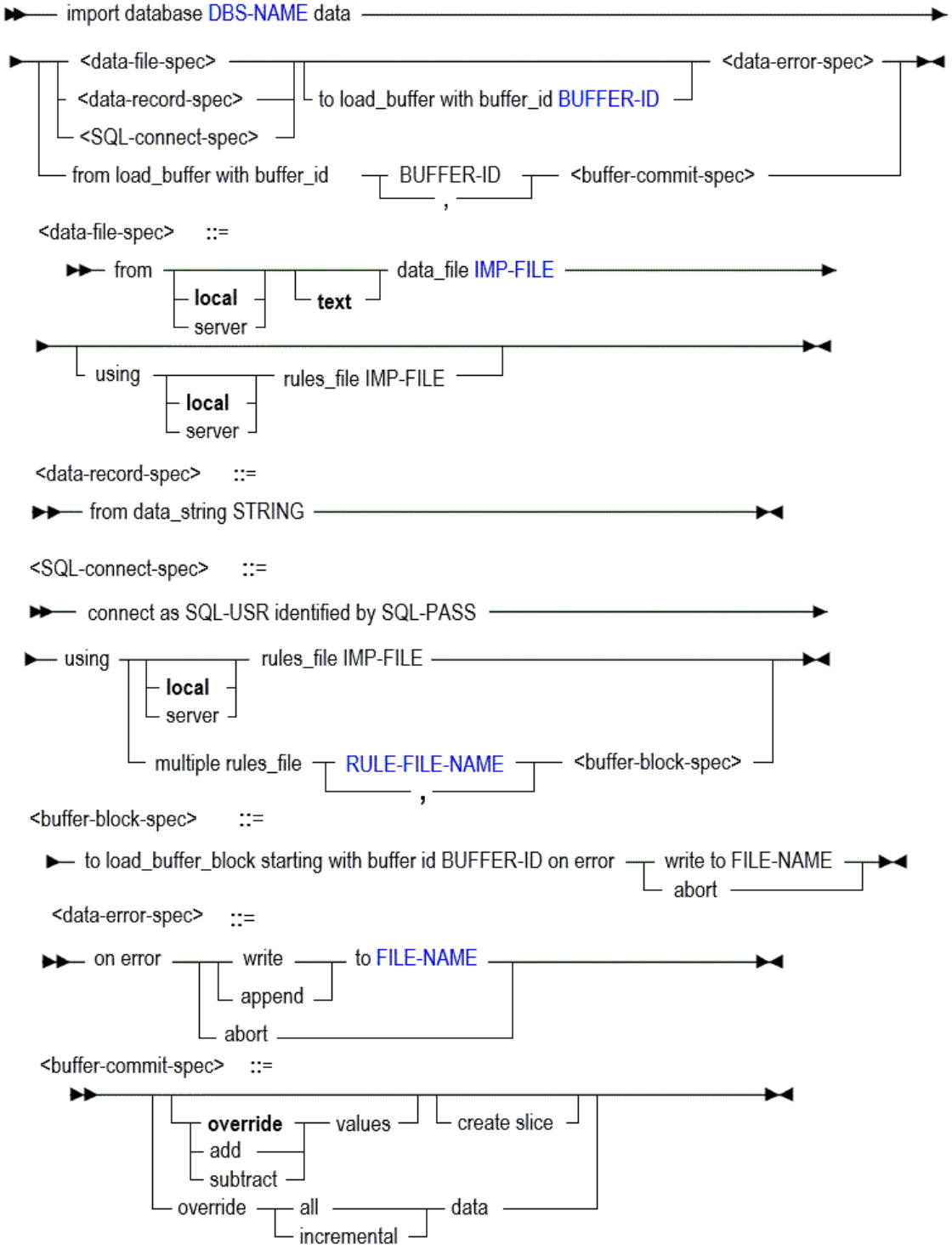
The MaxL import data statement for ASO mode helps you load data into an Essbase aggregate storage database.

Click here for non-aggregate storage version

Use this statement to import data from text files or other sources, with or without a rules file.

Minimum permission required: Write.

Syntax



- DBS-NAME
- BUFFER-ID
- IMP-FILE
- RULE-FILE-NAME
- FILE-NAME

Use **import data** in the following ways to load data into an aggregate storage database:

Keywords

import database <dbs-name> data from...
Specify whether the data import is from a local or server file, and what type of file to import data from.

...using ... rules_file
Import data into the database using a specified rules file.

...<data error spec> (on error...)
Required. Tell Essbase what to do in case of errors during the data load: abort the operation, or write or append to a specified error log.

...<data record spec> from data_string
Load a single data record into the selected database. The string following **data_string** must be a contiguous line, without newline characters.
Example

```
import database ASO_TypedMeasures.Basic data from data_string '"Color"
"Shoes" "Connecticut" "Q1" #Txt:Empty' on error abort;
```

...<SQL connect spec> (connect as...)
If you are importing from an SQL source, you must always use a rule file. Provide the appropriate user name and password:

- If the network connectivity to the source data is saved in an Essbase connection and Datasource, provide your Essbase credentials in the MaxL statement. For example:

  ```
  import database Sample.Basic data connect as "Essbaseadmin" identified by
  "Essbasepa55w0RD" using server rules_file "myrulefile" on error write to
  'loadds.err';
  ```

- Otherwise, provide the user name and password required to connect to the external RDBMS source. For example:

  ```
  import database Sample.Basic data connect as "RDBMSuser" identified by
  "RDBMSpa55w0RD" using server rules_file "myrulefile" on error write to
  'loadds.err';
  ```

When loading SQL data into aggregate storage databases, you can use up to eight rules files to load data in parallel by using the **multiple rules_file** grammar with the grammar specified in <buffer-block-spec>. Essbase initializes multiple temporary aggregate storage data load buffers (one for each rules file) and, when the data is fully loaded into the buffers, commits the contents of all buffers into the database in one operation.
Each rules file must use the same authentication information (SQL user name and password). In the following example, SQL data is loaded from two rules files (`rule1.rul` and `rule2.rul`):

```
import database ASOsamp.Basic data
   connect as TBC identified by 'password'
   using multiple rules_file 'rule1','rule2'
   to load_buffer_block starting with buffer_id 100
   on error write to "error.txt";
```

In specifying the list of rules files, use a comma-separated string of rules file names (excluding the `.rul` extension). The file name for rules files must not exceed eight bytes and the rules files must reside on Essbase Server.
In initializing a data load buffer for each rules file, Essbase uses the starting data load buffer ID you specify for the first rules file in the list (for example, ID 100 for rule1) and increments the ID number by one for each subsequent data load buffer (for example, ID 101 for rule2).
The ODBC driver you are using must be configured for parallel SQL connections.

> **Note:**
>
> Performing multiple SQL data loads in parallel to aggregate storage databases is different than using the **to load_buffer with buffer_id** grammar to load data into a buffer, and then using the **from load_buffer with buffer_id** grammar to explicitly commit the buffer contents to the database.

...to load_buffer with buffer_id
If you are importing data from multiple data files to an aggregate storage database, you can import to a buffer first, in order to make the data import operation more efficient.

...from load_buffer with buffer_id
If you are importing data from multiple data files to an aggregate storage database, you can import from a data load buffer in order to make the data import operation more efficient.

...from load_buffer with buffer_id...values
Specify whether you want to add to existing values, substract from existing values, or override existing values when committing the contents of the specified data load buffer to the database.

...from load_buffer with buffer_id...create slice
Commit the contents of the specified data load buffer to the database by creating a new data slice.

...from load_buffer with buffer_id override all data
Remove the current contents of the database and replace the database with the contents of the specified data load buffer.

...from load_buffer with buffer_id override incremental data
Remove the current contents of all incremental data slices in the database and create a new data slice with the contents of the specified data load buffer. The new data is created with the data load property "add values" (aggregate_sum). If there are duplicate cells between the new data and the primary slice, their values are added together when you query for them.

Notes

- This statement requires that the database is started.
- When using the import statement, you must specify what should happen in case of an error.

Example

The following example performs a data load using a data file stored in the shared folder of the Essbase file catalog. No rule file is needed.

```
import database 'ASOSamp'.'Basic' data from server data_file 'catalog/shared/
ASO_Sample_Data' on error write to "asodataload.err";
```

The following example commits the contents of a specified data load buffer to the ASOsamp.Basic database.

```
import database ASOsamp.Basic data from load_buffer with buffer_id 1;
```

The following example commits the contents of multiple data load buffers (buffer_id 1 and buffer_id 2) to the ASOsamp.Basic database.

```
import database ASOsamp.Basic data from load_buffer with buffer_id 1, 2;
```

The following example commits the contents of a specified data load buffer to the ASOsamp.Basic database by adding values.

```
import database ASOsamp.Basic data from load_buffer with buffer_id 1 add
values;
```

The following example commits the contents of the specified data load buffer into a new data slice in the ASOsamp.Basic database.

```
import database ASOsamp.Basic data from load_buffer with buffer_id 1 override
values create slice;
```

The following example replaces the contents of the ASOsamp.Basic database with the contents of the specified data load buffer.

```
import database ASOsamp.Basic data from load_buffer with buffer_id 1 override
all data;
```

The following example replaces the contents of all incremental data slices in the ASOsamp.Basic database by creating a new data slice with the contents of the specified data load buffer. The new data is created with the data load property "add values" (aggregate_sum). If there are duplicate cells between the new data and the primary slice, their values are added together when you query for them.

```
import database ASOsamp.Basic data from load_buffer with buffer_id 1 override
incremental data;
```

See Loading Data Using Buffers.

Import Query Tracking (Aggregate Storage)

The MaxL import query_tracking statement for ASO mode helps you import query tracking data from a text file to an Essbase aggregate storage cube.

Query tracking captures user retrieval statistics against an aggregate storage cube, enabling Essbase to make view-based optimizations to improve the performance of aggregations.

When an aggregate storage cube is refreshed or restarted, query data is not persisted in the cube. As an optimization technique, before refreshing or restarting, you can export query tracking data to a text file. To rebuild aggregate views after a refresh or restart, import the query tracking data from the text file. Essbase uses the query data to select the most appropriate set of aggregate views to materialize.

Prerequisites before importing query tracking data:

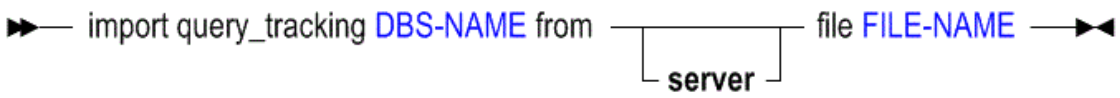
- Query tracking is enabled and working for an aggregate storage cube.

> **Note:**
>
> Query tracking is enabled by default for aggregate storage cubes. To check whether it's enabled, you can confirm by running the following MaxL statement (example is for ASOSamp Basic cube):
>
> ```
> query database ASOSamp.Basic get cube_size_info;
> ```
>
> If you need to enable query tracking, use the alter database (aggregate storage) statement with the **enable query_tracking** grammar.

- Query tracking data for the cube has been exported to a text file on the Essbase Server. Do not edit the text file with the exported query data.

Permission required: Database Manager.

Syntax



- DBS-NAME
- FILE-NAME

You can use **import query_tracking** in the following ways.

Keywords

import query_tracking <dbs-name> from server file...
Import query data to the specified aggregate storage cube from the specified file. For FILE-NAME, specify the name of the text file that contains the query data to import. By default, the file is created in the cube directory, or whichever Essbase Server directory the administrator has specified for FILEGOVPATH.

import query_tracking <dbs-name> from file...
You can omit the **server** keyword, but the result is the same.

> **Note:**
>
> Query tracking and query tracing are different.
>
> Query *tracking* enables you to capture user retrieval statistics against an aggregate storage cube, so that Essbase can make view-based optimizations to improve the performance of aggregations. It is on by default. Related MaxL statements include:
>
> ```
> import query_tracking
> export query_tracking
> alter database enable query_tracking
> query database appname.dbname get cube_size_info
> ```
>
> Query *tracing* helps you monitor Essbase query performance metrics for block storage cubes (including hybrid mode). It is off by default. If you enable it, Essbase logs metrics in a trace report. Related configuration parameters: TRACE_REPORT, QUERYTRACE, QUERYTRACETHRESHOLD, LONGQUERYTIMETHRESHOLD.

Example

```
import query_tracking ASOsamp.Basic from server file
'query_data_aso_sample.txt';
```

Imports the query data from the named file in the cube directory (or whichever directory the administrator has specified for export files) to the ASOsamp.Basic cube.

See Also

Export Query Tracking (Aggregate Storage)

Query Application (Aggregate Storage)

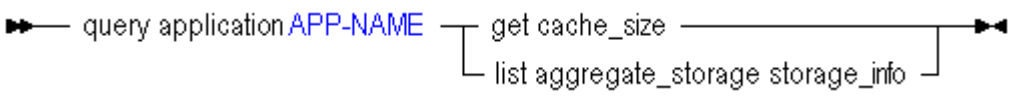
The MaxL query application statement for ASO helps you get information about the current state of an Essbase aggregate storage application.

Click here for block storage version

This statement is only applicable for aggregate storage applications.

This statement requires the application to be started.

Syntax



APP-NAME

Example

The following MaxL statement:

```
query application ASOSamp get cache_size;
```

returns the maximum size (in kilobytes) to which the aggregate storage cache may grow.

The following MaxL statement:

```
query application ASOSamp list aggregate_storage storage_info;
```

returns the following information:

Table 3-12 Query Application List Aggregate Storage Storage_Info MaxL Output Columns

Output Columns	Description
`Cache hit ratio`	Ratio of the number of requests answered from aggregate storage cache as opposed to from the hard disk. **Note:** This statistic may not be accurate when parallel data load or parallel calculation operations are in use.
`Current cache size (KB)`	The current size of the aggregate storage cache. See description for `current cache size limit (KB)`.
`Current cache size limit (KB)`	The maximum size (in kilobytes) to which the aggregate storage cache may grow.
`Page reads since last startup`	Number of data blocks (pages) read from disk since the last time the application was started.
`Page writes since last startup`	Number of data blocks (pages) written to disk since the last time the application was started.
`Page size (KB)`	Size of the data block (page) in kilobytes.
`Disk space allocated for data (KB)`	Total space used by all disk files in the `default` tablespace.
`Disk space used by data (KB)`	Total space actually in use within the disk files in the `default` tablespace (some space within files may be free).
`Temporary disk space allocated (KB)`	Total space used by all disk files in the `temp` tablespace.
`Temporary disk space used (KB)`	Total space actually in use within the disk files in the `temp` tablespace (some space within files may be free).

Query Database (Aggregate Storage)

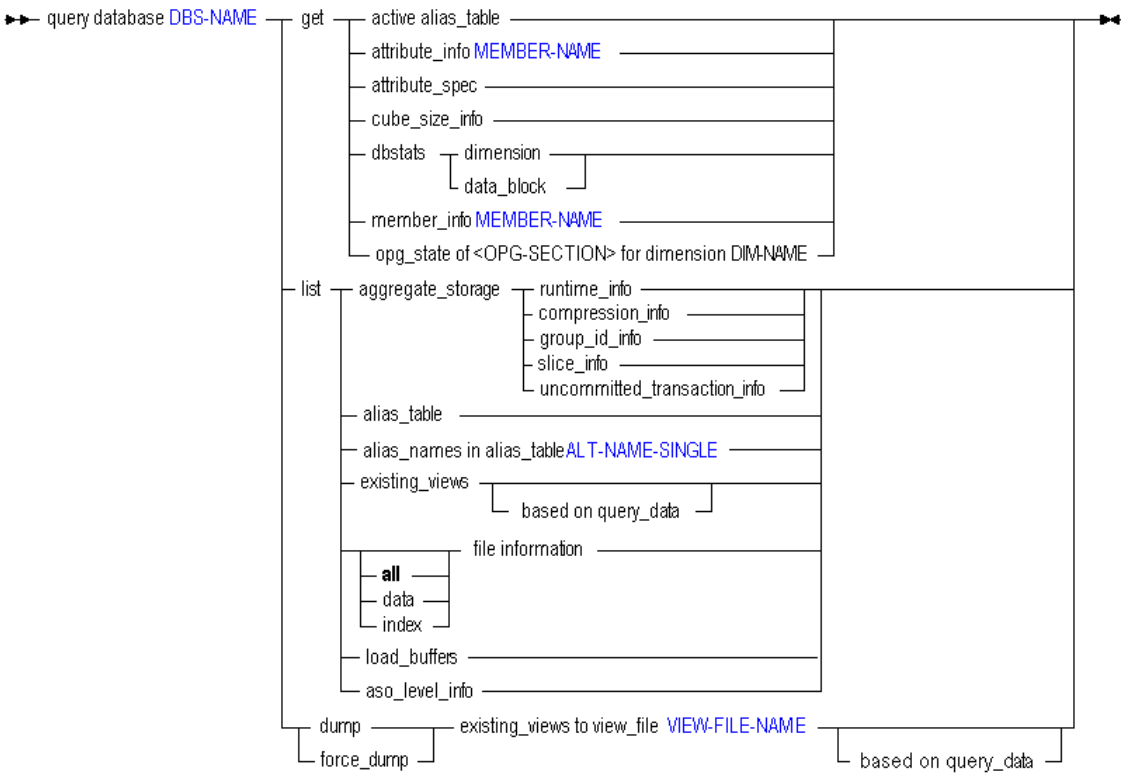
The MaxL query database statement for ASO mode helps you retrieve advanced information about the current state of an Essbase aggregate storage cube that is running.

Click here for non-aggregate storage version

Minimum permission required: Read.

This statement requires the database to be started.

Syntax



- DBS-NAME
- MEMBER-NAME
- ALT-NAME-SINGLE
- VIEW-FILE-NAME

You can query for database information in the following ways using **query database**:

Keywords

get active alias_table
Display the active alias table for the user issuing the statement.

get attribute_info
Get attribute member, dimension, and name information for the specified attribute member.

get attribute_spec
Display the current attribute specifications for the database. These specifications include attribute member name format, Attribute Calculation dimension member names, Boolean and date member names, and numeric range specifications.

get cube_size_info
Display information about input data size, aggregated data size, and number of queries tracked (when query tracking is enabled).
This statement returns the output listed in the following table:

Column Name	Contents
input_data_size_cells	Number of input-level cells in the cube.
input_data_size_bytes	Number of bytes used by the input-level data (approximate).
aggregate_data_size_cells	Total number of cells in all aggregate views in the cube.
aggregate_data_size_bytes	Number of bytes used by the aggregate cells (approximate).
kernel_queries_tracked	Number of kernel queries executed since the last time query tracking was enabled or query tracking information was reset.
total_query_cost	Total cost of all queries executed since the last time query tracking information was reset.
query_tracking_enabled	Values: True or False. Tells whether user retrieval statistics are being collected for the aggregate storage database. The statistics can be used by the following MaxL statements for query-based view optimization: • query database <dbs-name> list existing_views • execute aggregate process • execute aggregate selection Query tracking is on by default.

get dbstats dimension
Get information about dimensions.
The **index_type** field values are numeric, and translate as follows:

```
0               Dense
1               Sparse
3               None (database is aggregate storage)
```

get dbstats data_block
Get information about data blocks. The information returned has little relevance to aggregate storage databases.

get member_info <MEMBER-NAME>
Get information on a specific member.
Output

The **unary_type** field values are numeric, and translate as follows:

```
0               Add
1               Subtract
2               Multiply
3               Divide
4               Percent
5               NoRollUp
```

The **member_tag_type** field values translate as follows:

```
0               SkipNone
16384           SkipMissing
32768           SkipZero
49152           SkipBoth
1               BalFirst
2               BalLast
4               TwoPass
8               Average
64              Expense
```

Variations are possible. The field value consists of one of the first four "skip" values plus any/all/none of the last five values. Some examples:

```
0               SkipNone
77              SkipNone, BalFirst, TwoPass, Average, Expense
16385           SkipMissing and BalFirst
```

The first four "skip" values are base values, and added to them are combinations of 1, 2, 4, 8, and 64.
The **status** field values are hexadecimal, and translate as follows:

```
0               Normal
1               Never Share
2               Label
4               Refer Share
8               Refer Share (with different name)
16              Implicit share
32              Virtual Member (stored)
64              Virtual Member (not stored)
2048            Attribute
32768           Referred
```

get opg_state of member_data
Display outline navigational information (for example, parent, child, or sibling), fixed-length information (for example, the line aggregation symbol or the number of children), and text strings (for example, member names or aliases).
See Outline Paging Dimension Statistics for a description of the output.

get opg_state of member_name_namespace
Display information that matches member names to internal member identifiers (one section per database, thus the information for all dimensions is the same).
See Outline Paging Dimension Statistics for a description of the output.

get opg_state of member_formula
Display all formulas for the dimension.
See Outline Paging Dimension Statistics for a description of the output.

get opg_state of member_UDA
Display all user defined attributes (UDAs) for the dimension.
See Outline Paging Dimension Statistics for a description of the output.

get opg_state of member_UDA_namespace
Display information that matches UDAs to internal member identifiers.
See Outline Paging Dimension Statistics for a description of the output.

get opg_state of attribute_to_base_member_association
Display information that identifies the attribute member associated with each base member of the dimension.
See Outline Paging Dimension Statistics for a description of the output.

get opg_state of member_comment
Display all member comments for the dimension.
See Outline Paging Dimension Statistics for a description of the output.

get opg_state of member_alias_namespace
Display information that matches member alias names to internal member identifiers (one section per alias table, thus the information for all dimensions is the same).
See Outline Paging Dimension Statistics for a description of the output.

list aggregate_storage runtime_info
Display runtime statistics about the aggregate storage database. For a description of the output returned by this statement, see Aggregate Storage Runtime Statistics.

list aggregate_storage group_id_info
Display information about group IDs and their timestamps related to General Ledger cubes.

> **Note:**
>
> This grammar applies to General Ledger cubes, not to non-general-ledger aggregate storage databases. For normal aggregate storage databases, this table will be empty.
> This MaxL grammar is disabled for previous release Essbase MaxL clients.

This statement returns the following output:

Column Name	Contents
group_id	The allocation group id, according to the begin allocation command that created the allocation group. The number is an unsigned 64-bit integer.
transaction_id	The aggregate storage transaction ID that is used internally. The number is an unsigned 64-bit integer.
state	A string describing the state of the group ID. For example: BeginAllocation Done, Allocation In Progress, Allocation Done, EndAllocation In Progress.

Column Name	Contents
time_last_used	The date and time the group ID was last used. The value is either the time the group ID was created or the time that an allocation or custom calculation was last performed with this group ID. The value is a string.
time_expired	The date and time when the group ID will time out (expire). The value is a string.
expired	Indicates whether the group ID has timed out. If the group ID has expired, the group ID will be rolled back the next time a begin allocation command is executed. The value is a boolean.

For a description of the output returned by this statement, see Aggregate Storage Group ID Information Output.

list aggregate_storage slice_info
Display information about data slices and views, some information of which applies only to General Ledger cubes (not to non-general-ledger aggregate storage databases).

> **Note:**
>
> Small incremental slices may have fewer aggregate views than the primary slice (slice number 0). Incremental slices with less than 100,000 cells will never have any aggregate views built. However, if an incremental slice is larger than 100,000 cells and it is larger than the primary slice, then it will always have the same aggregate views as the primary slice.
> This MaxL grammar is disabled for previous release Essbase MaxL clients.

This statement returns the following output:

Column Name	Contents
transaction_id	**(Applies to General Ledger cubes only)** The ID of the transaction to which this slice and view belong. There is one transaction ID for each GL group ID. The number is an unsigned 64-bit integer. To find the corresponding group ID, use the following MaxL command: `query database app.db list aggregate_storage group_id_info;` For non-general-ledger aggregate storage databases, this number is always 0.
slice_id	ID number of the data slice. The number is an unsigned 32-bit integer.

Column Name	Contents
slice_tag	**(Applies to General Ledger cubes only)** When an allocation or custom calculation is done within an allocation begin/end, this number is the rule_id of the allocation that made this data slice. The number is an unsigned 64-bit integer. For non-general-ledger aggregate storage databases, this number is always 0.
view_id	0 indicates an input view; otherwise, the view is an aggregate view. The number is an unsigned 64-bit integer. To list the levels in a given aggregate view, use the following MaxL command: `query database app.db list existing_views;`
size_cells	The number of cells in the given view of the slice. The number is an unsigned 64-bit integer.
size_kb	The size in KB of the given view of the slice. The number is an unsigned 64-bit integer.

For a description of the output returned by this statement, see Aggregate Storage Slice Information Output.

list aggregate_storage uncommitted_transaction_info
Display information about uncommitted transactions that are related to General Ledger cubes.

> **Note:**
>
> This grammar applies to General Ledger cubes, not to non-general-ledger aggregate storage databases. For normal aggregate storage databases, this table will be empty.
> This MaxL grammar is disabled for previous release Essbase MaxL clients.

This statement returns the following output:

Column Name	Description
unc_transactions	The number of existing user transactions that are not yet committed.
unc_data_slices	The number of data slices used by uncommitted transactions.
unc_input_data_size_cells	The number of input cells used by uncommitted transactions.
unc_aggregate_views	The number of aggregate views used by uncommitted transactions.

Column Name	Description
unc_aggregate_data_size_cells	The number of aggregate cells used by uncommitted transactions.
unc_input_data_size_kb	The total disk space used by uncommitted input-level data.
unc_aggregate_data_size_kb	The total disk space occupied by uncommitted aggregate cells.

For a description of the output returned by this statement, see Aggregate Storage Uncommitted Transaction Information Output.

list aggregate_storage compression_info
Display estimated compression for aggregate storage databases when different dimensions are hypothetically used as the compression dimension. These estimates can help you choose the best dimension to use as the compression dimension.
In aggregate storage databases, the compression dimension enables database compression. A good candidate for a compression dimension is one that optimizes data compression and maintains retrieval performance. The following table lists data for all non-attribute dimensions, even though it may not be possible to select them as the compression dimension without significant changes to the outline. For information on the requirements of a compression dimension, see Understanding the Compression Dimension for Aggregate Storage Databases.
This statement returns the following output:

Column Name	Contents
dimension_name	Each dimension name in the database, hypothetically considered to be the compression dimension.
is_compression	Indicates whether the dimension is the aggregate storage compression dimension. (There can be only one compression dimension in an aggregate storage database.)
stored_level0_members	The number of leaf-level members in the dimension. A large number of stored level-0 members in a dimension indicates that it may not perform well as a compression dimension.
average_bundle_fill	Estimated average number of values per compression dimension bundle. Choosing a compression dimension that has a higher average bundle fill means that the database compresses better.
average_value_length	Estimated average number of bytes required to store a value. Dimensions with a smaller average value length compress the database better.

Column Name	Contents
level0_mb	Estimated size of the compressed database, in megabytes. A smaller expected level-0 size indicates that choosing this dimension enables better compression. Except for the scenario in which there is no compression dimension (*None*), all estimates assume that all pages are compressed. Since compressed pages require additional overhead that uncompressed pages do not, the estimated level-0 database size for some dimensions may be larger than the value for *None*.

list alias_table
Get a list of alias tables that are defined for the database.

list alias_names in alias_table
List the alias names defined in an alias table. Alias tables contain sets of aliases for member names and are stored in the database outline. Use this grammar to see a list of alias names defined in the specified table.

list existing_views
Display information about all aggregate views. An aggregate view is a collection of aggregate cells based on the levels of the members within each dimension.
The optional **based on query_data** clause causes the returned query cost information to be based on the collected cost of actual user queries. If this clause is not used, the default assumption is that all possible queries happen with the same probability.
To use the **based on query_data** clause, query tracking must be enabled. Query tracking is enabled by default, but if you need to enable it, use alter database <dbs-name> enable query tracking.

list ... file information
Get accurate index and data file information. Provides index and data file names, counts, sizes, and totals, and indicates whether or not each file is presently opened by Essbase. The file size information is accurate. Note that the file size information provided by the Windows operating system for index and data files that reside on NTFS volumes may not be accurate.

list load_buffers
Display a list and description of the data load buffers that exist on an aggregate storage database. See Listing Aggregate Storage Data Load Buffers.

list aso_level_info
Display the aggregation level count for each real dimension in the outline. Aggregation level count is the total number of aggregation levels in a real dimension (including associated attribute dimensions) that exist on an aggregate storage database.

dump|force_dump existing views...
Saves existing views of this database to an aggregation script. This action requires a minimum permission of execute (Execute).
If the specified script name already exists, you can use the **force_dump** keyword to overwrite it; otherwise, an error is returned if the file name already exists.

If the **based on query_data** phrase is used, the view selection that is saved will be based on previously collected query-tracking data. For more information about query tracking, see the `based on query_data` description in execute aggregate selection.

Example

```
query database ASOsamp.Basic list load_buffers;
```

Display a list and description of the data load buffers that exist on ASOsamp.Basic.

Outline Paging Dimension Statistics

The following columns are the output of the MaxL statement beginning with query database DBS-NAME get opg_state.

This statement is only applicable to databases using aggregate storage.

Table 3-18 Outline Paging Dimension Statistics MaxL Output Columns

Column Name	Contents
`version`	The version of the outline paging section (a Berkeley DB database).
`unique_keys`	The number of unique keys in the outline paging section.
`key/data_pairs`	The number of key/data pairs in the outline paging section.
`page_size`	The page size (in bytes) of the underlying database.
`minimum_keys_per_page`	The minimum number of keys per page.
`length of fixed_length_records`	The length of the fixed-length records (only available when the outline paging section is a Recno database).
`padding_byte_value_for_fixed_length_columns`	The padding byte value for fixed-length records.
`levels`	Number of levels in the underlying database corresponding to the outline paging section.
`internal_pages`	Number of internal pages in the underlying database.
`leaf_pages`	Number of leaf pages in the underlying database.
`duplicate_pages`	Number of duplicate pages in the underlying database.
`overflow_pages`	Number of overflow pages in the underlying database.
`pages_on_free_list`	Number of pages on the free list in the underlying database.
`bytes_free_in_internal_pages`	Number of bytes free in internal pages of the underlying database.
`bytes_free_in_leaf_pages`	Number of bytes free in leaf pages of the underlying database.
`bytes_free_in_duplicate_pages`	Number of bytes free in duplicate pages of the underlying database.
`bytes_free_in_overflow_pages`	Number of bytes free in overflow pages of the underlying database.

Aggregate Storage Runtime Statistics

You can examine the runtime statistics about a currently active Essbase aggregate storage (ASO) cube to learn how many stored levels each dimension has, as well as other information that can help you reduce the size of the cube.

Statistics per Dimension

The following MaxL statement:

```
query database asoapp.asodb list aggregate_storage runtime_info;
```

Returns output which includes the following lines:

```
 parameter                                    value
+-------------------------------------------+--------------------
Dimension [Year] has [3] levels, bits used                      4
Dimension [Measures] has [1] levels, bits                       4
Dimension [Product] has [3] levels, bits u                      5
Dimension [Market] has [3] levels, bits us                      5
Dimension [Scenario] has [1] levels, bits                       2
...
```

For each dimension, the following statistics are shown:

- The name of the dimension.
- How many stored levels the dimension has, in the aggregate storage perspective. Not all levels are stored in aggregate storage cubes; some are virtual levels.
- The number of bits being used in the key for the dimension.

Each cell in an aggregate storage database is stored as a key/value pair. The key length is 8 bytes or a multiple of 8 bytes; for example, 8, 16, 24.

Each key corresponds to a numeric value in the cube. The number of bits each dimension uses in the dimensional key is shown in the value column for each dimension.

The number of bits used in each key may amount to less than the bytes needed for physical storage of the key. As an example where this knowledge might be useful, consider a case in which a key is using 65 bits. If you can reduce the key length by one bit to 64, then you can have the key length be 8 bytes instead of 16, an improvement which reduces the overall size of the cube. Another use for these statistics might be to examine them to see how much you gain from removing any particular dimension.

Statistics for the Whole Cube

The same MaxL statement used above also returns the following lines in its output:

```
 parameter                          value
+-----------------------------------+---------------------
...
Max. key length (bits)                                  20
Max. key length (bytes)                                  8
Number of input-level cells                              0
Number of incremental data slices                        0
Number of incremental input cells                        0
```

```
Number of aggregate views                                0
Number of aggregate cells                                0
Number of incremental aggregate cells                    0
Cost of querying incr. data (ratio to total cost)        0
Input-level data size (KB)                               0
Aggregate data size (KB)                                 0
```

The whole-cube statistics are described in the following table.

Table 3-19 Aggregate Storage Runtime Statistics MaxL Output

Column Name	Description
`Max. key length (bits)`	The sum of all the bits used by each dimension. For example, there are 20 bits in the key used for dimensions, and the first 4 are used by Year.
`Max. key length (bytes)`	How many bytes the key uses per cell.
`Number of input-level cells`	The number of existing level-0 cells in the cube, including incremental slices.
`Number of incremental data slices`	The number of data slices resulting from incremental data loads.
`Number of incremental input cells`	The number of level-0 cells in the incremental data slices. To see the number of unique aggregate views, use the MaxL statement: `query database appname.dbname list existing_views;`
`Number of aggregate views`	The number of aggregate views in the cube, including those automatically built on incremental slices.
`Number of aggregate cells`	The number of cells stored in the cube's aggregate views.
`Number of incremental aggregate cells`	The number of cells stored in the incremental slices' aggregate views.
`Cost of querying incr. data (ratio to total cost)`	The average percentage of query time spent processing incremental data slices. This functionality is useful in deciding when slices should be merged together to improve query performance.
`Input-level data size (KB)`	The total disk space used by input-level data.
`Aggregate data size (KB)`	The total disk space occupied by aggregate cells.

For input-level and aggregate cells, the above statistics show:

1. Number of cells
2. Disk space occupied by those cells

Because Essbase uses compression, these statistics are useful because it is not always possible to derive disk size based on the number of cells.

Aggregate Storage Slice Information Output

The following MaxL statement:

```
query database "dmglex4"."basic" list aggregate_storage slice_info;
```

Returns the following output:

```
 transaction_id  slice_id  slice_tag  view_id  size_cells  size_kb
+--------------+---------+----------+--------+-----------+----------
              0         0          0        0          38         64
              3         1         66        0          21         32
              3         2         77        0          21         32
```

See Query Database.

Aggregate Storage Group ID Information Output

The following MaxL statement:

```
query database "dmglex4"."basic" list aggregate_storage group_id_info;
```

Returns the following output:

```
 group_id  transaction_id  state            time_last_used
time_expired              expired
+---------+---------------+----------------+------------------
+----------------------+-------------
      1234               1 Allocation Done  Wed Jul 20 17:39:57  Wed Jul 20
17:44:57           FALSE
```

See Query Database.

Aggregate Storage Uncommitted Transaction Information Output

The following MaxL statement:

```
query database "dmglex4"."basic" list aggregate_storage
uncommitted_transaction_info;
```

Returns the following output (columns are truncated):

```
 unc_trans unc_data_ unc_input unc_aggre unc_aggre unc_input unc_aggre
+---------+---------+---------+---------+---------+---------+---------
         0         0         0         0         0         0         0
```

See Query Database.

MaxL Definitions

To become an advanced user of MaxL, explore this documentation to learn about the parts of MaxL statements, MaxL's syntax and quoting rules, and the Essbase data types that comprise MaxL statement terminals.

This section contains the following topics:

MaxL Syntax Notes

MaxL syntax is comprised of statements, tokens, keywords, terminals names, strings, numbers, and delimiters.

The following syntax scheme applies to the creation of MaxL statements.

A MaxL **statement** corresponds to a sentence telling Essbase what to do with users and database objects. In this documentation, the grammar of MaxL statements is illustrated using railroad diagrams.

When issued via the MaxL Shell (essmsh), statements must be terminated by semicolons. Semicolons are used only to tell the shell when to terminate the statement; semicolons are not part of the MaxL language itself. Therefore, when issuing MaxL statements programmatically external programs, *do not* terminate with a semicolon.

A **token** is a delimited sequence of characters recognized by MaxL as a single readable unit. Tokens may be singleton names, keywords, strings, or numbers. Names can have one, two, or three tokens, delimited by periods. The space delimiting tokens can be any white space: spaces, tabs, new lines, or blank lines.

A **keyword** is a sequence of alphabetic characters that is part of the MaxL grammar. Each keyword is recognized as one token. To be recognized as keywords, keywords cannot be enclosed in quotation marks. However, if you wish to use MaxL keywords outside of the grammar as *terminals* (for example, as database names or passwords), they must be enclosed in single or double quotation marks.

A **terminal** is something referenced in the grammar for which you provide the correct name or definition. Terminals can be names, numbers, or strings. Examples: user-name, filter-name, size-string.

A **name** is a string which can be quoted or unquoted. Unquoted names must begin with an alphabetic character. Quoted names can consist of any sequence of characters. Names in MaxL are used to uniquely identify databases and database objects, such as users, applications, or filters.

Names in MaxL may be one of three types:

- *singletons*, which are names with one token (example: `Sample`). Use a singleton name for objects that have a system-wide context: for example, applications.

- *doubles*, which are names with two tokens. A double is two names connected by a period (example: `Sample.basic`). Use doubles to name objects with application-wide contexts, such as databases.
- *triples*, which are names with three tokens. A triple is three names connected by two periods (example: `Sample.Basic.Calcname`). Use triples to name objects having database-wide contexts, such as filters.

A **string** is unquoted or quoted. An unquoted string can be any sequence of non-special characters. A quoted string can be any sequence of characters (special, alphabetic, or numeric) in the MaxL Alphabet, enclosed in single or double quotation marks.

A **number** is one kind of token which may be passed to Essbase by MaxL. To have meaning, the number must be in the correct format for the Essbase value it represents. In the MaxL grammar documentation, labels for numbers indicate whether the allowed number is positive, negative, an integer, or a real. See Numbers in MaxL Syntax.

The MaxL **alphabet** consists of the following elements:

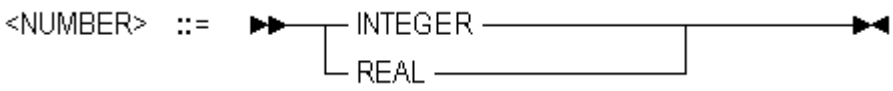
Table 3-20 MaxL Alphabet Elements

Element	Description
Special characters	Valid special characters: **. , ; :** % $ " ' SPACE TAB * + - = < > [ ] { } ( ) ? ! **/ \ | ~** ` # & @ **^** When using special characters in MaxL terminals, note the quoting rules (see Quoting and Special Characters Rules for MaxL Language).
Non-special characters	Alphabetic characters and numbers.
Alphabetic characters	Letters of the alphabet, and the underscore. [a-z, A-Z, _]
Numbers	See Numbers in MaxL Syntax

Numbers in MaxL Syntax

Numbers in the MaxL language are either integers or reals. Numbers are important elements of MaxL statements used by administrators to work with Essbase.

Numbers in MaxL statements fit into one of the following categories.



- INTEGER—Zero or a positive integer. Decimals and scientific notation are permitted. Examples: 0, 1, 1000, 1.3e4
- REAL—Zero or a positive real number. Decimals and scientific notation are permitted. Examples: 0.0, 1, 1000, 1000.4, 13.1e-4

Terminals

MaxL *terminals* are discrete parts of the language that cannot be broken down further. Usually, a MaxL terminal is a common Essbase data type. Terminals are important elements of MaxL statements used by administrators to work with Essbase.

The following section lists terminals in alphabetical order.

- LOCATION-ALIAS-NAME
- LOC-ALIAS-SINGLE
- LOG-TIME
- MACRO-EXPANSION
- MACRO-NAME
- MEMBER-NAME
- OBJ-NAME
- OBJ-NAME-SINGLE
- OUTLINE-ID
- PASSWORD
- PATHNAME_FILENAME
- PRECISION-DIGITS
- PROPS
- RNUM
- RTSV-LIST
- RULE-FILE-NAME
- SESSION-ID
- SIZE-STRING
- SPOOL-NAME
- STOPPING-VAL
- TABLSP-NAME
- TRIGGER-NAME
- URL-NAME
- USER-NAME
- VARIABLE-NAME
- VIEW-FILE-NAME
- VIEW-ID
- VIEW-SIZE

ACTION

The ACTION terminal in the MaxL language for Essbase represents the required action if a data-monitoring trigger is activated.

Syntax

```
mail [smtp],[sender],[receiver1,reciever2,...],[subject]
spool FILE-NAME
```

- mail - sends an email from the specified sender, to a specified email address or addresses, with the specified subject line (optional). Enclose email addresses containing special

characters in square brackets ([]). The mail action is not supported for after-update triggers, which are the only triggers available for use with aggregate storage cubes.

- spool - logs a message in a specified file in the `\trig` folder under the cube directory.

Type

string (see MaxL Syntax Notes)

Example

```
mail manager.sales.com, [mktdir@CC.com, Monitor@acnts.com]

spool "trgmonitor"
```

Referenced By

create trigger

drop trigger

ALLOC-NUMERIC

The ALLOC-NUMERIC terminal in the MaxL language for Essbase is an MDX numeric value expression used to specify the amount value for an allocation source.

The amount value is allocated to cells in the target region of an Essbase aggregate storage cube. The allocation numeric is one of the following:

- An MDX tuple
- A number
- An arithmetic expression using member names, with the following restrictions:
  - All members in the expression must be from the same dimension.
  - Tuples cannot be used.
  - Only arithmetic operators (+, -, /, and *) can be used.
  - MDX functions (such as Avg and Parent) are not allowed.

Type

string (see MaxL Syntax Notes)

Examples

- `(Acc_1000, Jan_2009)`
- `100.00`
- `(Acc_1000 + Acc_2000)/2`
- `AcctA + AcctB`
- `Balance * 1.1`

Referenced By

execute allocation

ALT-NAME-SINGLE

The ALT-NAME-SINGLE terminal in the MaxL language for Essbase represents the name of an alias table.

If the name contains special characters (see MaxL Syntax Notes), it must be enclosed in single or double quotation marks.

Type

name (see MaxL Syntax Notes)

Example

```
Region
'Long Names'
```

Referenced By

alter database

query database

APP-NAME

The APP-NAME terminal in the MaxL language for Essbase represents the name of an application.

The application name must not exceed 8 bytes (non-Unicode-mode applications) or 30 characters (Unicode-mode applications). Avoid using spaces. Application names are not case-sensitive.

If the name contains any allowed special characters, it must be enclosed in single or double quotation marks. Only the following special characters are allowed by Essbase within application names:

```
% (percent sign)

$ (dollar sign)

- (minus sign)

{ (open brace)

} (close brace)

( (open parenthesis)

) (close parenthesis)

! (exclamation mark)

~ (tilde)

` (accent mark)

# (pound sign)

& (ampersand)

@ (at sign)

^ (caret)
```

Type

name (see MaxL Syntax Notes)

Example

```
Sample
```

Referenced By

alter application

alter partition

alter system

create application

display application

display calculation

display database

display location alias

display lock

display object

display session

display trigger spool

drop application

drop lock

grant

query application

AREA-ALIAS

The AREA-ALIAS terminal in the MaxL language represents a cube area specified in an Essbase partition definition.

An area alias is a shorthand name used in the in the create partition statement for referring to an already-specified member expression that designates which areas of the databases should be partitioned.

Type

name (see MaxL Syntax Notes)

Example

In the create partition statement below, "foo" is an area-alias for the member expression specified in the area specification. To create area-aliases, enter the alias names after the member expression in each area specification. To specify which area is relevant when mapping members (if applicable), refer to its alias name in the **mapped** phrase.

In the example below, the alias name as *created* is shown in this color, and it specifies which area (in other words, it refers to the entire member expression string, `'@IDESCENDANTS(East) @IDESCENDANTS(Qtr1)'`). The alias name as *referenced* is shown in this color.

```
create or replace replicated partition sampeast.east
        area '@IDESCENDANTS("Eastern Region"), @IDESCENDANTS(Qtr1)'
to samppart.company at aspen
```

```
as admin identified by 'password'
        area '@IDESCENDANTS(East) @IDESCENDANTS(Qtr1)' foo
        mapped foo (Year) to (Yr)
update allow validate only;
```

> **Note:**
>
> All area aliases used in a mapping should be associated with the target (as in the example above), and the direction of member names listed in the mapped clause should go from source to target.

Referenced By

create partition

BUFFER-ID

The BUFFER-ID terminal in the MaxL language is an identifier for an Essbase aggregate storage data load buffer.

The buffer ID must be a number between 1 and 999,999 inclusive. To destroy a buffer before a data load is complete, you must use the same BUFFER-ID number that was used to initialize the buffer.

Type

number (see MaxL Syntax Notes)

Referenced By

alter database (aggregate storage)

CALC-NAME

The CALC-NAME terminal in the MaxL language for Essbase represents the name of a stored calculation.

Syntax

- **Syntax for database-level calculation:**

  ```
  name1.name2.name3
  ```

- **Syntax for application-level calculation:**

  ```
  name1.name3
  ```

- *name1*—Application name.
- *name2*—Database name (not required for application-level calcs).
- *name3*—Calculation script name.

Type

name (see MaxL Syntax Notes)

For calculations associated with databases, three tokens are required, to indicate application and database context and the calculation name.

Example

```
Sample.basic.'alloc.csc'
```

For application-level calculations, two tokens are required, indicating application context and the calculation name. When executing application-level calculations, you must specify which database to calculate using the syntax 'on database STRING.'

Example

- `Sample.'alloc.csc'` is the application-level CALC-NAME.
- `execute calculation Sample.'alloc.csc' on database Basic;` is a way to execute the application-level calculation on a database.

If any part of the name contains special characters (see MaxL Syntax Notes), it must be enclosed in single or double quotation marks.

Referenced By

create calculation

display calculation

drop calculation

execute calculation

grant

CALC-NAME-SINGLE

The CALC-NAME-SINGLE terminal in the MaxL language for Essbase represents part of the name of a stored calculation.

The CALC-NAME-SINGLE is the third token of a database-level CALC-NAME given to a stored Essbase calculation.

If any part of the name contains special characters (see MaxL Syntax Notes), it must be enclosed in single or double quotation marks.

Type

name (see MaxL Syntax Notes)

Example

If the full database-level calc name is `sample.basic.'alloc.csc'`, then CALC-NAME-SINGLE is `'alloc.csc'`.

Referenced By

alter database (set)

CALC-SPEC-STRING

The CALC-SPEC-STRING terminal in the MaxL language is an optional string you can use to describe the syntax of a custom-defined function or macro you have added to the Essbase calculator library.

This optional Essbase calculator-syntax specification string must be enclosed in single quotation marks.

Type

string (see MaxL Syntax Notes)

Example

```
'@COVARIANCE (expList1, expList2)'
```

Use CALC-SPEC-STRING only if the function or macro needs to be returned through the API that lists functions.

Referenced By

create function

create macro

CALC-STRING

The CALC-STRING terminal in the MaxL language represents the body of an anonymous (unstored) Essbase calculation, or the string used to specify the body of a stored calculation at the time you create it.

Because calculations are terminated with a semicolon, and semicolons are special characters to MaxL, CALC-STRING should be enclosed in single or double quotation marks.

Type

string (see MaxL Syntax Notes)

Example

```
CALC DIM(Year, Measures, Product);
```

Referenced By

alter database (set)

execute calculation

COLUMN-WIDTH

The COLUMN-WIDTH terminal in the MaxL language for Essbase represents the width of the columns that should appear in MaxL display output tables.

The value for COLUMN-WIDTH must be a number (at least 8), or the keyword default. Default indicates a column width of 20 characters.

Type

number (see MaxL Syntax Notes) or **default**

Example

```
set display column width 80

set display column width default
```

Referenced By

MaxL Shell Commands (in Set Display Column Width)

COMMENT-STRING

The COMMENT-STRING terminal in the MaxL language for Essbase represents a string of user-defined informational text.

If the comment string contains special characters (see MaxL Syntax Notes), it must be enclosed in single or double quotation marks.

Type

string (see MaxL Syntax Notes)

Example

```
'This is a comment.'
```

Referenced By

alter application

alter database (set)

alter database (misc)

alter database (for ASO)

create application

create database

create function

create macro

create partition

CONDITION

The CONDITION terminal in the MaxL language represents a conditional expression serving as the test for whether an Essbase database trigger is activated.

The condition is a numeric-value-expression developed in MDX. Must be enclosed in double quotation marks. Enclose strings containing special characters in square brackets ([]).

Type

string (see MaxL Syntax Notes)

Example

```
"Jan>20"
```

Referenced By

create trigger

CUBE-AREA or MDX-SET

The CUBE-AREA or MDX-SET terminal in the MaxL language represents an Essbase cube area or other specification, developed in MDX as a symmetric, syntactically-valid set.

The area specification must be static; for example, it cannot contain Dynamic Calc members or runtime functions such as Filter, TopSum, or BottomSum. Enclose strings containing special characters in square brackets ([]).

Type

string (see MaxL Syntax Notes)

Examples

The following is a set of siblings.

```
'{[Jan 2000], [Feb 2000], [Mar 2000]}'
```

The following is a crossjoined set.

```
'{([Qtr1], [New York]), ([Qtr1], [California]),
 ([Qtr2], [New York]), ([Qtr2], [California])}'
```

The following set is also a tuple.

```
'{(Jun, FY2011, Actual)}'
```

The following statement clears data from a region of ASOsamp.Basic. The region is defined using a CUBE-AREA expressed in MDX.

```
alter database ASOsamp.Basic clear data in region '{(Coupon, [Prev Year],
South)}' physical;
```

Referenced By

create trigger

alter database (aggregate storage)

execute allocation

execute calculation (aggregate storage)

DATE

The DATE terminal in the MaxL language for Essbase is a validly formatted date string.

A date string must be formatted as follows:

- `MM/DD/YYYY` or `MM/DD/YY`
- Any character can be used as a separator; for example, `MM~DD~YY` is valid.

If the string contains special characters (see MaxL Syntax Notes), it must be enclosed in single or double quotation marks.

Type

string (see MaxL Syntax Notes)

Example

```
'04/16/03'
'04.16.2003'
04_16_2003
```

Referenced By

alter database (misc)

query database

DBS-EXPORT-DIR

The DBS-EXPORT-DIR terminal in the MaxL language represents a suffix for the name of an Essbase cube directory to contain export files for linked reporting objects (LROs).

This string is the suffix for the name of a cube directory you specify to contain LRO export files. The directory is created (upon export lro) in the application directory with a full name such as `appname-dbname-suffix`.

After LRO export, the directory contains file-type LRO binary files (if applicable to the database), and the LRO-catalog export file with file-extension *.exp*.

Example: For a Sample.Basic export of LROs, if DBS-EXPORT-DIR is given as `lros`, then the `sample-basic-lros` directory is created in the application directory. The `sample-basic-lros` directory contains file-type LRO binary files and the LRO-catalog export file `'sample-basic-lros.exp'`.

Notes:

- MaxL creates exactly one export directory; it does not create a directory *structure*.

- If the specified export directory already exists, the export LRO statement fails, as a safeguard against overwriting.

Type

string (see MaxL Syntax Notes)

Referenced By

export lro

DBS-NAME

The DBS-NAME terminal in the MaxL language represents the name of an Essbase database (also known as a cube).

Two tokens are required in the name, to indicate application context.

Syntax

```
name1.name2
```

- *name1*—The name of the application containing the database.

  The application name must not exceed 8 bytes (non-Unicode-mode applications) or 30 characters (Unicode-mode applications). Avoid using spaces.
- *name2*—The name of the database.

  The database name must not exceed 8 bytes (non-Unicode-mode applications) or 30 characters (Unicode-mode applications). Avoid using spaces.

Database names are not case-sensitive.

If the name contains any allowed special characters, it must be enclosed in single or double quotation marks. Only following special characters are allowed by Essbase within database names:

```
% (percent sign)
$ (dollar sign)
- (minus sign)
{ (open brace)
} (close brace)
( (open parenthesis)
) (close parenthesis)
! (exclamation mark)
~ (tilde)
` (accent mark)
# (pound sign)
& (ampersand)
@ (at sign)
^ (caret)
```

Type

name (see MaxL Syntax Notes)

Example

```
Sample.basic
```

Referenced By

alter database

alter database (for ASO)

alter partition

alter system

alter trigger

create database

create location alias

create outline

create partition

display database

display filter

display filter row

display location alias

display lock

display object

display partition

display session

display trigger spool

display variable

drop database

drop lock

drop partition

drop trigger spool

execute aggregate build

execute aggregate process

execute aggregate selection

export data

grant

import data

import dimensions

import lro

query database

refresh outline

refresh replicated partition

DBS-STRING

The DBS-STRING terminal in the MaxL language represents the second token of the name of an Essbase database (also known as a cube).

The DBS-STRING is the second token of DBS-NAME. The limit for this token is 8 characters.

If the token contains special characters (see MaxL Syntax Notes), it must be enclosed in single or double quotation marks.

Type

string (see MaxL Syntax Notes)

Example

```
basic
```

Referenced By

alter application

alter application (for ASO)

alter database (misc)

alter database (for ASO)

alter partition

execute calculation

DIM-NAME

The DIM-NAME terminal in the MaxL language represents the name of a dimension in an Essbase database outline.

If the dimension string contains special characters (see MaxL Syntax Notes), it must be enclosed in single or double quotation marks.

Type

string (see MaxL Syntax Notes)

Example

```
Year
Market
```

Referenced By

query database

EXPORT-DIR

The EXPORT-DIR terminal in the MaxL language represents the name of an Essbase cube directory to which linked reporting objects (LROs) were previously exported.

This directory is expected to exist under the application directory, and to contain LRO-catalog information exported using Export LRO. Give only the directory name; do not give a full path. The directory specification must be enclosed in single or double quotation marks. The typical format is `appname-dbname-suffix`.

Type

string (see MaxL Syntax Notes)

Example

```
'sample-basic-out'
```

Referenced By

alter system (delete export_directory)

FILE-NAME

The FILE-NAME terminal in the MaxL language represents a file name or path in Essbase.

If the string contains special characters, it must be enclosed in single or double quotation marks. Double quotation marks allows variable expansion; single quotation marks does not. If the file path contains a backslash (\ ), it must be preceded with another backslash (\\ ) to be interpreted correctly by the MaxL Shell.

Type

string (see MaxL Syntax Notes)

Example

- `file01`
- `"errors.txt"`
- `'/Sample/Basic/expsamp.txt'`
- `'D:\\filename'`

Referenced By

alter database (misc)

alter database (for ASO)

export data

import data

import dimensions

FILE-NAME-PREFIX

The FILE-NAME-PREFIX terminal in the MaxL language represents the first part of a file name or path in Essbase.

If you use display drillthrough DBS-NAME to FILE-NAME-PREFIX on the client in the working directory of MaxL execution, URL drill through information is written to files generated with this prefix.

These display output files contain the URL XML content of URL drill-through definitions used to link to content hosted on ERP and EPM applications.

If the string contains special characters (see MaxL Syntax Notes), it must be enclosed in single or double quotation marks.

Type

string (see MaxL Syntax Notes)

Example

```
urlxmls
```

Referenced By

display drillthrough

FILTER-NAME

The FILTER-NAME terminal in the MaxL language represents the name of an Essbase security filter.

Three tokens are required, to indicate application and database context.

The following special characters are not permitted:

```
! @ # $ % ^ & * () _ + - = {} [] | ; ' : " < > ? , . / ~ `
```

Syntax

```
name1.name2.name3
```

- *name1*—Application name.
- *name2*—Database name.
- *name3*—Filter name.

Type

name (see MaxL Syntax Notes)

Example

```
Sample.basic.filt1
```

Referenced By

alter filter

create filter

display filter

display filter row

drop filter

grant

FULL-EXPORT-DIR

The FULL-EXPORT-DIR terminal in the MaxL language represents a full path to an Essbase cube directory to contain export files for linked reporting objects (LROs).

Full path for the name of a directory for LRO export files,to be created (upon export lro) anywhere on the client or server.

After export lro, the directory contains file-type LRO binary files (if applicable to the database), and the LRO-catalog export file named in the format *directoryname*`.exp`.

For example, if for a Sample.Basic export, FULL-EXPORT-DIR is given as `/scratch/exports/lros`, then the `lros` directory structure is created under `/scratch/exports/` if `/scratch/exports/` exists. The `lros` subdirectory contains file-type LRO binary files and the LRO-catalog export file `lros.exp`.

Notes:

- MaxL creates exactly one export directory; it does not create a directory *structure*. In the above example, if the `/scratch/exports` directory structure exists, MaxL creates the `lros` directory as a subdirectory of `/scratch/exports`, but if `/scratch/exports` does not exist, MaxL will fail to create `/scratch/exports/lros`.
- If the specified export directory already exists, the export LRO statement will fail. This is a safeguard against overwriting existing export directories.
- On Windows, use double backslashes (\\ ) to represent backslashes in file paths. This is so that the MaxL Shell can interpret the second backslash literally, and not as an escape sequence.

Type

string (see MaxL Syntax Notes)

Examples

Windows

```
'C:\\temp\\lros'
```

Linux

```
'/scratch/exports/lros'
```

Referenced By

export lro

FUNC-NAME

The FUNC-NAME terminal in the MaxL language represents the name of a custom-defined Essbase calculator function (CDF).

Using one token indicates a global function. For a local (application-level) function, use two tokens.

The name of a custom-defined function is a unique string that begins with a letter or a @, #, $, _ symbol. The name can include alphanumeric characters or the aforementioned symbols. Oracle recommends that you start a function name with @.

Any token of the name that contains special characters (see MaxL Syntax Notes), must be enclosed in single or double quotation marks.

Syntax

Syntax for local (application-level) function:

```
name1.name2
```

Syntax for global function:

```
name2
```

See MaxL Syntax Notes

- *name1*—Application name.
- *name2*—Function name.

Type

name (see MaxL Syntax Notes)

Example

- Example of a local function:

  ```
  Sample.'@COVARIANCE'
  ```

- Example of a global function:

  ```
  '@COVARIANCE'
  ```

Referenced By

create function

display function

drop function

GROUP-NAME

The GROUP-NAME terminal in the MaxL language represents name of an Essbase security group.

Group name guidelines:

- Non-Unicode application limit: 256 bytes
- Unicode-mode application limit: 256 characters
- Group names must start with a letter or a number
- The following special characters are not permitted:

```
. ; , = + * ? [ ] |< > \ " ' / [Space] [Tab]
```

- If the group name contains any special characters (see MaxL Syntax Notes), the name must be enclosed in single or double quotation marks.

Types

- name (see MaxL Syntax Notes)
- name@provider
- WITH IDENTITY ID-STRING

> **Note:**
>
> If a user or group name includes the @ character, you must specify the provider as well. For example, if you want to log in user admin@msad which is on a Native Directory provider, you must specify 'admin@msad@Native Directory'.

Examples

```
Sales010
```

```
Sales010@Native Directory
```

```
with identity "native://nvid=f0ed2a6d7fb07688:5a342200:1265973105c:-7f46?
GROUP"
```

Referenced By

alter application

create group

display privilege

drop group

grant

HOST-NAME

The HOST-NAME terminal in the MaxL language represents the URL of the Essbase server.

Use the discovery URL instead of a host name. A discovery URL is the URL provided by your Service Administrator, with `/agent` appended to the end. For example, `https://192.0.2.1:443/essbase/agent`.

Leading or trailing spaces will be trimmed off. Maximum length is 1024 bytes (non-Unicode application) or characters (Unicode application).

ID-RANGE

The ID-RANGE terminal in the MaxL language for Essbase represents a comma-separated list of sequence ID ranges for logged sequential transactions.

An transaction ID range can consist of:

- A single transaction: *n* to *n*; for example, 1 to 1
- Multiple transactions: *x* to *y*; for example, 20 to 100

Type

string (see MaxL Syntax Notes)

Example

```
1 to 10,20 to 100
```

Referenced By

alter database (misc)

ID-STRING

The ID-STRING terminal in the MaxL language for Essbase represents a unique attribute identifying a user or group in a directory.

Example

```
native://nvid=f0ed2a6d7fb07688:5a342200:1265973105c:-7f46?USER
```

Referenced By

USER-NAME

GROUP-NAME

IMP-FILE

The IMP-FILE terminal represents a data or rule file name or path used for Import statements in MaxL. The file location can be specified as **local** or **server**, where local means from the

same filesystem where the statement is issued, and server means the Essbase Server file catalog.

If the data or rule file is specified to be on the server, the following rules apply. If the data or rule file is specified to be local (or left unspecified, in which case it is also local), skip the following and refer to FILE-NAME.

If you are using server data_file or server rules_file, you can get the file from an Essbase Server catalog path, as shown in the example.

Type

name (see MaxL Syntax Notes)

Example

The following statement performs a data load using a data file stored in the shared folder of the Essbase file catalog. The rule file is in the cube directory for Sample Basic.

```
import database 'Sample'.'Basic' data from server data_file 'catalog/shared/
Data_Basic' using server rules_file 'Data' on error write to "dataload.err";
```

For information about permitted import directories, refer to Specify Files in a Catalog Path.

Referenced By

import data

import dimensions

IMPORT-DIR

The IMPORT-DIR terminal in the MaxL language represents a directory path from which to re-import exported Essbase linked reporting objects (LROs).

> **Note:**
>
> If importing lros from <*Application Directory*> directory on the Essbase Server, you can specify just the directory name instead of the absolute path.
>
> If you do not know where <*Application Directory*> is in your environment, refer to Environment Locations in the Essbase Platform.

The IMPORT-DIR string should indicate the export directory used for the export lro statement. It must be enclosed in single or double quotation marks.

Type

string (see MaxL Syntax Notes)

Examples

Relative paths (for example, `'../exports/lros'`) are not supported.

```
'/scratch/exports/lros'
```

```
'Sample-Basic-lros'
```

For information about how IMPORT-DIR is created, see the grammar and definitions for export lro.

Referenced By

import lro

JAVACLASS.METHOD

The JAVACLASS.METHOD terminal in the MaxL language represents the Java class and method for a custom-defined Essbase calculator function (CDF).

This string must be a fully qualified Java method name and signature, enclosed in single or double quotation marks.

Type

string (see MaxL Syntax Notes)

Example

```
'com.hyperion.essbase.calculator.Statistics.covariance'
```

For Java code examples and MaxL registration scripts for custom-defined functions, see Custom-Defined Calculation Functions.

Referenced By

create function

LOCATION-ALIAS-NAME

The LOCATION-ALIAS-NAME terminal in the MaxL language represents the name of a location alias referencing another Essbase database.

Syntax

```
name1.name2.name3
```

- *name1*—Application name.
- *name2*—Database name.
- *name3*—Location alias name.

Type

name (see MaxL Syntax Notes)

Example

```
Sample.Basic.EasternDB
```

Referenced By

create location alias

display location alias

LOC-ALIAS-SINGLE

The LOC-ALIAS-SINGLE terminal in the MaxL language represents the single form of the name of a location alias referencing another Essbase database.

Use the single form of the location alias name if you are creating a new location alias.

Type

name (see MaxL Syntax Notes)

Example

```
EasternDB
```

Referenced By

create location alias

LOG-TIME

The LOG-TIME terminal in the MaxL language for Essbase represents a specific log time after which to replay subsequent transactions.

Enclose the string in quotation marks.

Type

string (see MaxL Syntax Notes)

Example

```
'11_20_2007:12:20:00'
```

Referenced By

alter database (misc)

MACRO-EXPANSION

The MACRO-EXPANSION terminal in the MaxL language represents the extended definition of a custom-defined Essbase calculator macro (CDM), to be substituted in wherever the registered macro name is referenced in a calculation.

If the string contains special characters (see MaxL Syntax Notes), it must be enclosed in single or double quotation marks.

Type

string (see MaxL Syntax Notes)

Example

```
'@COUNT(SKIPMISSING,@RANGE(@@S))'
```

See Custom-Defined Macros

Referenced By

create macro

MACRO-NAME

The MACRO-NAME terminal in the MaxL language represents the name of a custom-defined Essbase calculator macro (CDM). Macro names are a shorthand way to refer to macro expansions.

The name of a macro is a unique string that begins with a letter or a @, #, $, _ symbol. The name can include alphanumeric characters or the aforementioned symbols. Oracle recommends that you start a macro name with @. Although macros must have unique names within a given application, a global macro and a local macro can share the same name. However, the local macro takes precedence.

To create or refer to a local (application-level) macro, use the double name (for example, **`Sample.'@JSUM'`**).

Any part of the name that contains special characters must be enclosed in single or double quotation marks.

Syntax

Syntax for local (application-level) macro:

```
name1.name2
```

Syntax for global macro:

```
name2
```

- *name1*—Application name.
- *name2*—Macro name.

Type

name

Example

- `Sample.'@COUNTRANGE'`—Application-level (local) macro name without a signature, meaning that there are no restrictions on its arguments.
- `Sample.'@COUNTRANGE(Any)'`—Same as `Sample.'@COUNTRANGE'`. Once registered for the application, `@COUNTRANGE` can take any arguments.
- `'@JCOUNTS'` - System-level (global) macro name.
- `'@JCOUNTS(single,group)'`— Same as `'@JCOUNTS'`, but with a signature restricting its arguments.

For more information about macro signatures (input parameters), see Custom-Defined Macro Input Parameters.

Referenced By

create macro

display macro

drop macro

MEMBER-EXPRESSION

The MEMBER-EXPRESSION terminal in the MaxL language represents a specification of members from one or more dimensions in an Essbase database outline.

The member expression can be one member, a list of members, member combinations separated by commas, or member sets defined with functions. The string be enclosed in single or double quotation marks.

Type

string (see MaxL Syntax Notes)

Example

```
'@ANCESTORS(Qtr2)'
```

If MEMBER-EXPRESSION contains MEMBER-NAMES that begin with numbers or contain special characters, enclose those member names in double quotation marks, and the entire MEMBER EXPRESSION in single quotation marks. For example:

- `create or replace filter demo.basic.numfilt no_access on '"2"';`
- `'@DESCENDANTS("Eastern Region"), @CHILDREN(Qtr1)'`

The following example shows how create drillthrough uses a member expression to define the list of drillable regions.

```
create drillthrough sample.basic.myURL from xml_file "temp.xml" on
{'@Ichildren("Qtr1")', '@Ichildren("Qtr2")'} level0 only;
```

Referenced By

alter filter

create filter

create partition

create drillthrough

alter drillthrough

MEMBER-NAME

The MEMBER-NAME terminal in the MaxL language represents the name of a member in an Essbase database outline.

If the member name contains special characters (see MaxL Syntax Notes), it must be enclosed in single quotation marks.

Type

name (see MaxL Syntax Notes)

Example

```
Jan


'New York'
```

If MEMBER-NAME is part of MEMBER-EXPRESSION and MEMBER-NAME begins with a number or contains special characters (see MaxL Syntax Notes), enclose MEMBER-NAME in double quotation marks and enclose MEMBER-EXPRESSION in single quotation marks.

Referenced By

alter database (misc)

create partition

query database

OBJ-NAME

The OBJ-NAME terminal in the MaxL language represents the name of an Essbase database object. Three tokens are required, to indicate application and database context.

Syntax

```
name1.name2.name3
```

- *name1*—Application name.
- *name2*—Database name.
- *name3*—Object name.

Type

name (see MaxL Syntax Notes)

Example

```
Sample.basic.Calcdat
```

Referenced By

alter object

drop object

OBJ-NAME-SINGLE

The OBJ-NAME-SINGLE terminal in the MaxL language represents part of the name of an Essbase database object.

This single form of a stored database object name can be used when altering the object. This form of object name is equal to the third token of OBJ-NAME.

If any part of the name contains special characters (see MaxL Syntax Notes), it must be enclosed in single or double quotation marks.

Type

name (see MaxL Syntax Notes)

Example

If the full database object name is `sample.basic.calcdat`, then OBJ-NAME-SINGLE is `calcdat`.

Referenced By

alter object

OUTLINE-ID

The OUTLINE-ID terminal in the MaxL language represents the numeric identification of an Essbase aggregate storage database outline associated with a view.

The outline ID is returned by the execute aggregate selection statement. The **execute aggregate selection** statement returns a set of views, including the outline ID for the views it returns.

Type

number (see MaxL Syntax Notes)

Example

```
4142187876
```

Referenced By

execute aggregate selection

execute aggregate build

PASSWORD

The PASSWORD terminal in the MaxL language represents an Essbase user's password (not applicable for externally authenticated users).

Password guidelines:

- Non-Unicode application limit: 100 bytes
- Unicode-mode application limit: 100 characters
- If the string contains special characters (see MaxL Syntax Notes), the password must be enclosed in single or double quotation marks.

  Use of `$` (dollar sign) character within the Essbase password is not supported for logins in a Linux environment.
- Leading or trailing spaces are illegal and will be trimmed off

Type

string (see MaxL Syntax Notes)

Referenced By

alter partition

create location alias

create outline

create partition

Login

PATHNAME_FILENAME

The PATHNAME_FILENAME terminal in the MaxL language represents a full path to a file.

If the string contains special characters (see MaxL Syntax Notes), it must be enclosed in single or double quotation marks.

Type

string (see MaxL Syntax Notes)

Referenced By

query database

PRECISION-DIGITS

The PRECISION-DIGITS terminal in the MaxL language represents the number of decimal places to use for the Essbase data values in MDX query output.

Precision digits must be specified as an integer between 0 and 15, inclusive.

Type

number (see MaxL Syntax Notes)

Referenced By

alter session

PROPS

The PROPS terminal in the MaxL language represents Essbase aggregate storage data load properties that determine how missing and zero values, duplicate values, and multiple values for the same cell in the data source are processed.

The properties are:

- `ignore_missing_values`: Ignore missing values in the data source.
- `ignore_zero_values`: Ignore zeros in the data source.
- `aggregate_use_last`: Combine duplicate cells by using the value of the cell that was loaded last into the data load buffer. When using this option, data loads are significantly slower, even if there are not any duplicate values.

  > **Caution:**
  >
  > The `aggregate_use_last` method has significant performance impact, and is not intended for large data loads. If your data load is larger than one million cells, consider separating the numeric data into a separate data load process (from any typed measure data). The separate data load can use `aggregate_sum` instead.

- `aggregate_sum`: (Default) Add values when the buffer contains multiple values for the same cell.

If you use multiple properties and any conflict occurs, the last property listed takes precedence.

Type

string (see MaxL Syntax Notes)

Referenced By

alter database (aggregate storage)

RNUM

The RNUM terminal in the MaxL language represents a resource-usage specification for constraining temporary Essbase aggregate storage data load buffers.

The specification must be a number between .01 and 1.0 inclusive. If not specified, the default value is 1.0. Only two digits after the decimal point are significant (for example, 0.029 is interpreted as 0.02). The total resource usage of all load buffers created on a database cannot exceed 1.0 (for example, if a buffer of size 0.9 exists, you cannot create another buffer of a size greater than 0.1). Send operations internally create load buffers of size 0.2; therefore, a load buffer of the default size of 1.0 will cause send operations to fail because of insufficient load buffer resources.

Type

number (see MaxL Syntax Notes)

Example

The *specified* resource_usage and *actual* resource usage of the aggregate storage cache will be different, depending on how many threads you specify in ASOCACHECONCURRENTCONSUMINGTHREADS. The formula to calculate actual resource usage is:

```
(1/ASOCACHECONCURRENTCONSUMINGTHREADS)*resource_usage
```

The actual aggregate-storage cache size Essbase allocates, in megabytes, is calculated as:

```
ASODEFAULTCACHESIZE*actual resource usage
```

Assume the following configurations are set for the cube:

```
ASOCACHECONCURRENTCONSUMINGTHREADS 5
ASODEFAULTCACHESIZE 500
```

With the above settings, you can initialize up to 5 data load buffers, specifying, for each, the maximum resource_usage of 1.0.

Using the following MaxL statements, you initialize three load buffers:

```
alter database AsoSamp.Basic initialize load_buffer with buffer_id 1
resource_usage 1.0;
alter database AsoSamp.Basic initialize load_buffer with buffer_id 2
resource_usage 0.5;
alter database AsoSamp.Basic initialize load_buffer with buffer_id 3
resource_usage 0.1;
```

The following MaxL statement displays the actual resource usage:

```
query database AsoSamp.Basic list load_buffers;
buffer_id internal active resource_usage aggregation_method ignore_missings
ignore_zeros
-------------------------------------------------------------------------------
```

```
----------+
1       FALSE    FALSE           0.2  AGGREGATE_SUM      FALSE         FALSE
2       FALSE    FALSE           0.1  AGGREGATE_SUM      FALSE         FALSE
3       FALSE    FALSE          0.02 AGGREGATE_SUM      FALSE         FALSE
```

Referenced By

alter database (aggregate storage), when initializing load buffers

RTSV-LIST

The RTSV-LIST terminal in the MaxL language represents a string of runtime substitution variables that can be used in Essbase calculation scripts for block storage databases.

Runtime substitution variables are specified as key/value pairs. The string must be enclosed with single quotation marks, and key/value pairs must be separated by a semicolon, including a semicolon after the last runtime substitution variable in the string and before the terminal single quotation mark.

Runtime substitution variables—name and default value—must be declared in the SET RUNTIMESUBVARS calculation command. If you include a runtime substitution variable in RTSV-LIST that has not been declared in SET RUNTIMESUBVARS, Essbase ignores the undeclared runtime substitution variable (no warnings or exceptions are generated).

Type

string (see MaxL Syntax Notes)

Example

In this example of a runtime substitution variable string, the name and value of four runtime substitution variables are specified (for example, the value of the runtime substitution variable named "a" is 100):

```
'a=100;b=@CHILDREN("100");c="Actual"->"Final";d="New York";'
```

Referenced By

execute calculation (block storage only)

RULE-FILE-NAME

The RULE-FILE-NAME terminal in the MaxL language represents a comma-separated list of strings of rule file names. Each rule file name should be an 8-character object file name with no extension. The rule files must reside on the Essbase server.

Type

string (see MaxL Syntax Notes)

Example

```
'h1h1h1' , 'h1h1h2'
```

Referenced By

import data (aggregate storage)

SESSION-ID

The SESSION-ID terminal in the MaxL language represents the unique Essbase session ID. The session ID can be used to logout a user session, or end the current request in that session.

Type

number (see MaxL Syntax Notes)

Example

```
3310545319
```

Referenced By

alter system

display session

query database

SIZE-STRING

The SIZE-STRING terminal in the MaxL language is typically a way to specify the size of an Essbase cache or memory buffer.

Syntax

```
number units
```

OR

number

- *number*—Any positive number. Decimals and scientific notation are permitted. Whitespace between *number* and *units* is optional.
- *units*—One of the following: b, kb, mb, gb, tb (case-insensitive).If units are unspecified, bytes are assumed.

Type

number (see MaxL Syntax Notes)

Examples

```
51040b
51040 b
11MB
11000kb
12.34gb
1234e-2gb
```

Referenced By

alter application

alter database (set)

alter database (for ASO)

alter tablespace

SPOOL-NAME

The SPOOL-NAME terminal in the MaxL language represents the name of an Essbase database trigger's output file, located in the `trig` folder within the database directory.

The name of a trigger's output file, as specified in the THEN or ELSE section of the create trigger statement.

Syntax

name1.name2.name3

Type

name (see MaxL Syntax Notes)

Example

In the following create trigger statement, the **bold** section is the spool name.

```
create or replace trigger Sample.Basic.Trigger_Jan_20
where "(Jan,Sales,[100],East,Actual)"
when Jan > 20 and is(Year.currentmember,Jan) then
spool Trigger_Jan_20
end;
```

Referenced By

display trigger spool

drop trigger spool

ACTION

STOPPING-VAL

The STOPPING-VAL terminal in the MaxL language is a growth constraint you can specify for disk space usage when performing an aggregation on an Essbase aggregate storage database.

This number is the optional stopping value for the execute aggregate process statement. Use this value to give the ratio of the growth size you want to allow during the materialization of an aggregate storage database, versus the pre-aggregation size of the database (Before an aggregation is materialized, the database contains only level 0 input-level data.)

Type

number (see MaxL Syntax Notes)

Example

A stopping value of 1.5 means that during the materialization of the aggregation, the aggregate cells are allowed to occupy up to 50% of the disk space occupied by the level-0 data.

Referenced By

execute aggregate selection

execute aggregate process

TABLSP-NAME

The TABLSP-NAME terminal in the MaxL language represents the name of a tablespace for an Essbase aggregate storage database.

Tablespaces are applicable only to aggregate storage databases. Possible names for tablespaces you can alter are `default` and `temp`. Other tablespace names reserved by the system are `metadata` and `log`.

Syntax

name1.name2

- *name1*—Application name.
- *name2*—Tablespace name.

Type

name (see MaxL Syntax Notes)

Example

```
temp
```

Referenced By

alter tablespace

display tablespace

TRIGGER-NAME

The TRIGGER-NAME terminal in the MaxL language represents the name of the trigger device created to track and respond to Essbase database updates.

Trigger names must be triple names, specifying application name, database name, and trigger name (if you rename the application or database, the trigger is invalidated). Trigger names are case-insensitive, are a maximum of 30 bytes, and cannot contain special characters.

Syntax

```
name1.name2.name3
```

- *name1*—Application name.
- *name2*—Database name.
- *name3*—The name of the trigger.

Type

name (see MaxL Syntax Notes)

Example

```
Sample.Basic.MyTrigger
```

Referenced By

alter trigger

create trigger

display trigger

drop trigger

URL-NAME

The URL-NAME terminal in the MaxL language represents the name of a drill-through URL definition used to link Essbase database values to content hosted on Oracle ERP and EPM applications.

For more about drill through URLs, see Drill Through to a URL.

Syntax

```
name1.name2.name3
```

- *name1*—Application name
- *name2*—Database name
- *name3*—URL name

Type

name (see MaxL Syntax Notes)

Example

```
Sample.basic.MyURL
```

If any part of the name contains special characters (see MaxL Syntax Notes), the name must be enclosed in single or double quotation marks.

Referenced By

create drillthrough

alter drillthrough

display drillthrough

drop drillthrough

USER-NAME

The USER-NAME terminal in the MaxL language represents the name of an Essbase user.

User name guidelines:

- Limit 50 characters
- The following special characters are not permitted:

```
; , = + * ? [ ] |< > \ " ' / # [Space] [Tab]
```

- If the user name contains any special characters (see MaxL Syntax Notes), the name must be enclosed in single or double quotation marks.

Types

- name (see MaxL Syntax Notes)
- name@provider
- WITH IDENTITY ID-STRING

> **Note:**
>
> If a user or group name includes the @ character, you must specify the provider as well. For example, if you want to log in user admin@msad which is on a Native Directory provider, you must specify 'admin@msad@Native Directory'.

Examples

```
JWSmith
```

```
JWSmith@Native Directory
```

```
with identity "native://nvid=f0ed2a6d7fb07688:5a342200:1265973105c:-7f46?USER"
```

Referenced By

alter application

alter database (misc)

alter partition

alter system

create location alias

create outline

create partition

create user

display privilege

drop lock

grant

query database

Login

VARIABLE-NAME

The VARIABLE-NAME terminal in the MaxL language represents the name of an Essbase substitution variable.

The name can only contain alphanumeric characters and the underscore: `(a-z A-Z 0-9 _)`.

Type

name (see MaxL Syntax Notes)

Example

```
curmonth
```

Referenced By

alter application

alter database

alter system

display variable

VIEW-FILE-NAME

The VIEW-FILE-NAME terminal in the MaxL language represents the name of an aggregation script containing information derived during aggregate view selection for an Essbase aggregate storage (ASO) database.

The file is created in the cube directory, with a `.csc` extension.

Aggregation scripts are valid as long as the dimension level structure in the outline has not changed.

Executing an aggregation script (using execute aggregate build) materializes the aggregate views specified within it.

The `.csc` extension is optional when executing the script.

The file name can be a maximum of 8 characters in length (excluding the extension) and must not contain any of the following characters, or whitespace: `:;.,=+*?[]|<>"'\/`

Type

string (see MaxL Syntax Notes)

Referenced By

execute aggregate selection

execute aggregate build

query database

VIEW-ID

The VIEW-ID terminal in the MaxL language represents the numeric identifier of an aggregate view for an Essbase aggregate storage (ASO) database.

The numeric identification of an aggregate view, returned by the execute aggregate selection statement. The concept of views applies only to aggregate storage databases.

VIEW-IDs persist only as long as their associated OUTLINE-IDs. OUTLINE-IDs change when changes are made to the outline.

Type

number (see MaxL Syntax Notes)

Example

```
8941
```

Referenced By

execute aggregate selection

execute aggregate build

VIEW-SIZE

The VIEW-SIZE terminal in the MaxL language represents the approximate view size as a fraction of input data size, for an Essbase aggregate storage (ASO) database.

Express the approximate view size as a fraction of the input data size. For example, a view size of `0.5` means that the view is 2X smaller than the input-level view. The concept of views applies only to aggregate storage databases.

Type

number (see MaxL Syntax Notes)

Referenced By

execute aggregate build

Privileges and Roles

Essbase privileges are grouped together into permission-sets called *roles*. Using MaxL, adminstrators grant roles to users depending on their access needs. The scope of a role can be the system, the application, or the database.

Essbase system privileges are indivisible database access types. In MaxL, privileges are grouped together to form permission-sets called *roles*. Privileges themselves are not grantable

using MaxL; you typically grant roles, which are the equivalent of privilege levels. The scope of a role can be the system, the application, or the database.

While one privilege does not imply another, roles are hierarchical. The following table illustrates the Essbase system privileges that are contained in each MaxL system role.

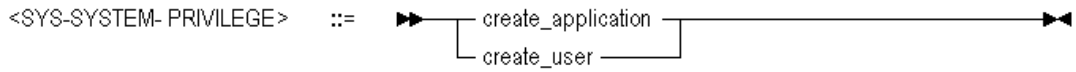
Table 3-21 Privileges and Roles

Privileges and Roles	read	write	calculate	manage database	create database	start application	manage application	create/drop application
no access	.	.	.	.	.	.	.	.
read	✔	.	.	.	.	.	.	.
write	✔	✔	.	.	.	.	.	.
execute	✔	✔	✔	.	.	.	.	.
manager (database)	✔	✔	✔	✔	.	.	.	.
manager (application)	✔	✔	✔	✔	✔	✔	✔	.
administrator	✔	✔	✔	✔	✔	✔	✔	✔

System-Level System Privileges

The Essbase system level privileges in MaxL are create_application and create_user.

The following system privileges are applicable to the Essbase server. They do not apply to any specific application or database. They are not included in any role except for the role of administrator.

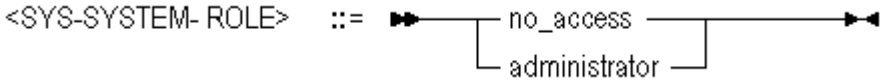


- create_application—Ability to create and delete applications.
- create_user—Ability to create and delete users and groups.

System-Level System Roles

The Essbase system level roles in MaxL are no_access and administrator.

The following system roles are applicable to the Essbase server. They do not apply to any specific application or database. The following roles have a system-wide scope:

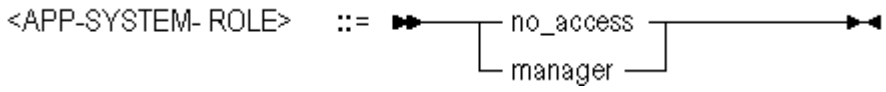


- no_access—No access to the system.

- administrator—Full access to the entire system, including other administrators.

Application-Level System Roles

Application-level system roles are applicable to an application. The following roles may have an application-wide scope:



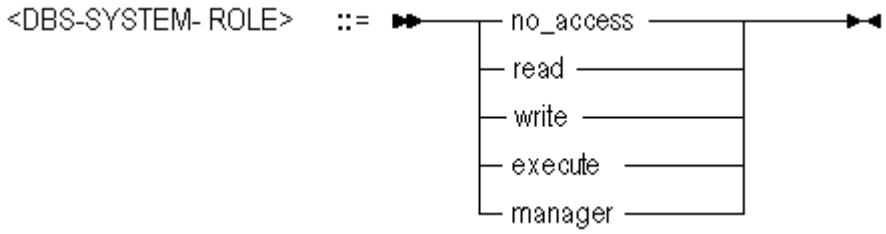
- no_access—No access to the application or any databases within it.
- manager—Manager access to the application and any databases within it. Manager access means ability to create, delete, and modify databases within the application, in addition to having Read, Write, and Execute access for that application.

Database-Level System Roles

Database-level system roles are access permissions applicable to Essbase cubes. Minimum permissions can be set at the application or cube level, affecting all users and groups. Permissions can also be granted to individual users or groups, if Essbase uses EPM Shared Services security mode.

Minimum Cube Permissions

Database-level system roles are minimum access permissions you can set for Essbase cubes. The following roles have a database-wide scope and are available when assigning minimum database permissions:

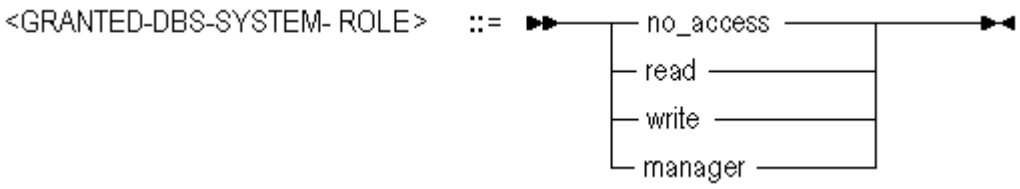


- no_access—No access to the cube (if assigned using alter database) or to any cubes in the application (if assigned using alter application).
- read—Read-only access to the cube (if assigned using alter database) or to all cubes in the application (if assigned using alter application). Read access means ability to view files, retrieve data values, and run report scripts.
- write—Write access to the cube (if assigned using alter database) or to all cubes in the application (if assigned using alter application). Write access means ability to update data values, in addition to having Read access.
- execute—Calculate access to the cube (if assigned using alter database) or to all cubes in the application (if assigned using alter application). Calculate access means ability to update data values, in addition to having Read and Write access.

- manager—Manager access to the cube (if assigned using alter database) or to all cubes in the application (if assigned using alter application). Manager access means ability to modify cube outlines, in addition to having Read and Write access.

Permissions Grantable to Users and Groups

The following database-level system roles are available for granting to users and groups, only if Essbase uses EPM Shared Services security mode.



- no_access—No access to the cube.
- read—Read-only access to the cube. Read access means ability to view files, retrieve data values, and run report scripts.
- write—Write access to the cube. Write access means ability to update data values, in addition to having Read access.
- manager—Manager access to the cube. Manager access means ability to modify cube outlines, in addition to having Read and Write access.

Quoting and Special Characters Rules for MaxL Language

These rules apply to terminals of MaxL statements; for example, USER-NAME or FILE-NAME. Rules for MaxL Shell also apply (see MaxL Shell Syntax Rules and Variables).

Tokens enclosed in Single Quotation Marks

Contents are preserved as literal, with the following exceptions:

- One backslash is ignored; two are treated as one.
- Apostrophe must be escaped using one backslash (\').

Example: `export database sample.basic data to data_file 'D:\\export.txt';`

Result: Exports data to `D:\export.txt`.

Example: `display user 'O'Brien';`

Result: Error.

Example: `display user 'O\'Brien';`

Result: User `O'Brien` is displayed.

Tokens Enclosed in Double Quotation Marks

Contents are preserved as literal, with the following exceptions:

- Variables are expanded.
- One backslash is ignored; two are treated as one.

- Apostrophe must be escaped using one backslash (\').

Example: `export database sample.basic data to data_file "D:\\export.txt";`

Result: Exports data to `D:\export.txt`.

Example: `export database sample.basic data to data_file "$ARBORPATH\\App\\Sample\ \Basic\\export.txt";`

Result: Exports data to `C:\Hyperion\products\Essbase\EssbaseServer\App\Sample\Basic\export.txt`.

Example: `display user "O'Brien";`

Result: Error.

Example: `display user "O\'Brien";`

Result: User O'Brien is displayed.

Use of Backslashes in MaxL

Ignored unless preceded by another backslash (the escape character). Must use single or double quotation marks around the token containing the two backslashes.

```
create application 'finance\\budget';
```

Result: Application `finance\budget` is created.

Example (Windows):

```
export database sample.basic using report_file
'EssbaseServer\\App\\Sample\\Basic\\asym.rep'
to data_file 'c:\\home\\month2.rpt';
```

Result: The Windows file paths are interpreted correctly as `EssbaseServer\App\Sample\Basic\asym.rep` and `c:\home\month2.rpt`.

Use of Apostrophes (Single Quotation Marks)

Syntax error returned, unless preceded by a backslash (the escape character) and enclosed in single or double quotation marks.

Example:`display user 'O\'Brien';`

Result: User `O'Brien` is displayed.

> **Note:**
>
> Use sparingly. Apostrophes are permitted by Essbase in user and group names, but not in application or database names.

Use of Dollar Signs

Syntax error returned, unless preceded by a backslash (the escape character) and enclosed in single quotation marks. Dollar signs ($) intended literally need to be escaped by the backslash so that they are not considered variable indicators.

Example:`create application '\$App1';`

Result: Application `$App1` is created.

MaxL Shell Commands

There are different ways to start (invoke) the MaxL Shell, and you may often need MaxL Shell commands in addition to MaxL statements when you work with Essbase. MaxL Shell commands include login, spool, set column width, set message level, set timestamp, echo, nesting, iferror/goto, and logout.

The MaxL Shell has a separate set of useful commands, independent of the MaxL language itself.

MaxL Shell Invocation

The MaxL Shell (`essmsh`) is a pre-parser mechanism for entering MaxL statements.

You can start the shell to be used interactively, to read input from a file, or to read stream-oriented input (standard input from another process). You can log in after you start the shell, interactively or using a login statement in the input file. You can also log in at invocation time, by using the -l flag.

To start the `essmsh` shell, do not invoke it directly. In order for the environment to be set correctly, you must start `essmsh` using `startMAXL.bat` (Windows) or `startMAXL.sh` (UNIX).

Help is available at the operating-system command prompt if you type `startMAXL.bat -h | more`.

> **Note:**
>
> The help text is for `essmsh` shell; however, in order for the environment to be set correctly, you must start `essmsh` using `startMAXL.bat` (Windows) or `startMAXL.sh` (UNIX). You can pass the same arguments to `startMAXL` as you would formerly pass to `essmsh`. For example, instead of `essmsh -l username password`, you should now use `startMAXL.bat -l username password`.

Interactive Input Flags

You can log into the MaxL Shell for interactive use (typing statements at the keyboard) in the following ways.

Flag	Description/Example
No Flag	Invoked without a flag, file name, or arguments, the MaxL Shell starts in interactive mode and waits for you to log in. Note to UNIX users: In the following examples, replace `startMAXL.bat` with `startMAXL.sh`. `startMAXL.bat`

-a Flag: Arguments	With the -a flag, the MaxL Shell starts in interactive mode and accepts space-separated arguments to be referenced at the keyboard with positional parameters.
	If interactive arguments are used with spooling turned on, variables are recorded in the log file just as you typed them (for example, `$1`, `$2`).
	
	`startMAXL.bat -a Fiona sunflower appname dbsname`
	
	`MAXL> spool on to 'D:\output\createapp.out';`
	
	`MAXL> login $1 identified by $2;`
	
	`49 - User logged in: [Fiona].`
	
	`MAXL> create application $3;`
	
	`30 - Application created: ['appname'].`
	
	`MAXL> create database $3.$4 as Sample.Basic;`
	
	`36 - Database created: ['appname'.'dbsname'].`
	
	`MAXL> spool off;`

-l Flag: Login	When the -l flag is used followed by a user name and password, the MaxL Shell logs in the given user name and password and starts in interactive or non-interactive mode. The user name and password must immediately follow the -l, and be separated from it by a space. `startMAXL.bat -l Fiona sunflower`

Flag	Description/Example

-u, -p, and -s Flags: Login Prompts and Hostname Selection	The MaxL Shell can be invoked using -u and -p options in interactive mode, for passing the user name and password to the shell upon startup. To be prompted for both username and password, use the -s option with the host name of the Essbase Server.
	• If -s <host-name> is passed to the shell, MaxL will prompt for the user name and password, and the password will be hidden.
	`startMAXL.bat -s localhost`
	`Enter UserName> admin`
	`Enter Password> ********`
	`OK/INFO - 1051034 - Logging in user admin.`
	`OK/INFO - 1051035 - Last login on Monday, January 28, 2020 10:06:16 AM.`
	`OK/INFO - 1241001 - Logged in to Essbase.`
	• If -u <username> is passed to the shell and -p <password> is omitted, MaxL Shell will prompt for the password, and the password will be hidden.
	`startMAXL.bat -u smith`
	`Enter Password > ******`
	• If -p <password> is passed to the shell and -u <username> is omitted, MaxL Shell will prompt for the user name.
	`startMAXL.bat -p password`
	`Enter Username > smith`
	• If -m <messageLevel> is passed to the shell, only the specified level of messages will be returned by the shell.
	`startMAXL.bat -m error`
	Values for <messageLevel> include: **default**, **all**, **warning**, **error**, and **fatal**. The default value is **all** (same as specifying **default**).

-m Flag: Message Level	If -m <messageLevel> is passed to the shell, only the specified level of messages will be returned by the shell. Example:`startMAXL.bat -m error` Values for the <messageLevel> include: **default**, **all**, **warning**, **error**, and **fatal**. The default value is **all** (same as specifying **default**).

File Input

You invoke the MaxL Shell to run scripts (instead of typing statements at the keyboard) in the following ways.

If you type `startMAXL.sh` or `startMAXL.bat` followed by a file name or path, the shell takes input from the specified file.

```
startMAXL.sh /client/scripts/filename.msh
```

Entered at the command prompt, the above example starts the shell, tells it to read MaxL statements from a file, and terminates the session when it is finished.

```
startMAXL.bat filename
```

The above example starts the shell to read MaxL statements from `filename`, located in the current directory (the directory from which the MaxL Shell was invoked).

If you type `startMAXL.sh` or `startMAXL.bat`, followed by a file name, followed by an argument or list of space-separated arguments, essmsh remembers the command-line arguments, which can be referenced as `$1`, `$2`, etc. in the specified file. If spooling is turned on, all variables are expanded in the log file.

```
startMAXL.bat filename.msh Fiona sunflower localhost
```

The above example starts the shell to read MaxL statements from `filename.msh`, located in the current directory.

Standard Input

With the -i flag, essmsh uses standard input, which could be input from another process. For example,

```
program.sh | startMAXL.bat -i
```

When **program.sh** generates MaxL statements as output, you can pipe `program.sh` to `startMAXL.bat -i` to use the standard output of `program.sh` as standard input for essmsh. Essmsh receives input as `program.sh` generates output, allowing for efficient co-execution of scripts.

Example

```
echo login Fiona sunflower on localhost; display privilege user;|
startMAXL.bat -i
```

In the above example, the MaxL Shell takes input from the echo command's output. User Fiona is logged in, and user privileges are displayed.

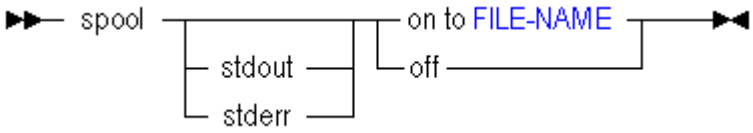
Before using any of the MaxL Shell commands that follow, you need to log in (see Login)

Spool On/Off

Log the output of a MaxL Shell session to a file. Send standard output, informational messages, error messages, and/or warning messages generated by the execution of MaxL statements to a file.

If FILE-NAME does not exist, it is created. If FILE-NAME already exists, it is overwritten. If a directory path is not specified for FILE-NAME, FILE-NAME is created in the current directory of the MaxL Shell. Directories cannot be created using the spool command.

Message logging begins with **spool on** and ends with **spool off**.



FILE-NAME

Example

```
spool on to 'output.txt';
```

Sends output of MaxL statements to a file called output.txt, located in the current directory where the MaxL Shell was invoked.

Description

Most operating systems support three channels for input/output:

- STDIN (standard input channel)
- STDOUT (standard output channel)
- STDERR (standard error channel)

Most operating systems also provide command-line options for re-directing data generated by applications, depending on which of the above channels the data is piped through.

Errors in MaxL are flagged as STDERR, allowing command-line redirection of errors using operating-system redirection handles. Non errors are flagged as STDOUT; thus normal output may be logged separately from error output. Here is an example of redirecting error-output at invocation time:

```
essmsh script.mxl 2>errorfile.err
```

> **Note:**
>
> Operating-system redirection handles vary; check the platform documentation.

You can also redirect STDERR and STDOUT independently to different MaxL output logs, using the corresponding options in the `spool` command. For example, you can direct errors to one file and output to another by placing the following lines in your script:

```
spool stdout on to 'output.txt';
spool stderr on to 'errors.txt';
```

or you can direct errors only:

```
spool stderr on to 'errors.txt';
```

or you can direct output only:

```
spool stdout on to 'output.txt';
```

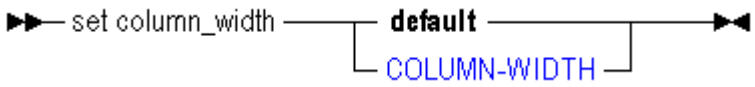
> **Note:**
>
> You cannot use the generic spool and the special output-channel spools in the same script. For example, the following is not valid:

```
spool on to 'session.txt';
spool stderr on to 'errors.txt';
```

Set Display Column Width

Set the width of the columns that appear in MaxL display output tables, for the current MaxL Shell session.

- Default: 20 characters
- Minimum: 8 characters
- Maximum: None.



COLUMN-WIDTH

Example

```
set column_width 10;
```

Sets the column width to 10 characters.

```
set column_width default;
```

Sets the column width back to 20 characters.

Set Message Level

Set the level of messaging you want returned from MaxL Shell sessions. By default, all messages are returned.

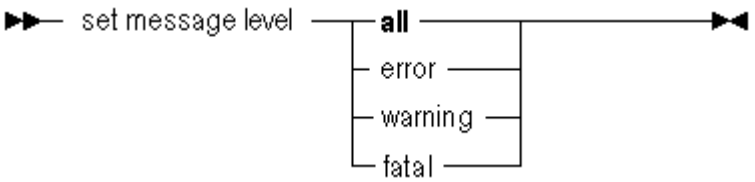


Table 3-22 MaxL Shell Message Levels

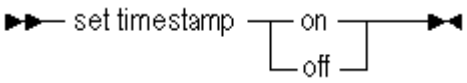
Message level	Description
all	Errors, warnings, status reporting, and informational messages. This is the default message level.
error	Essbase and MaxL Shell error messages.
warning	Essbase warning messages.
fatal	Only errors which cause the shell to disconnect from Essbase.

Example

```
set message level all;
```

Set Timestamp

Enable or disable the display of a timestamp after execution of each MaxL statement. By default, no timestamps are returned.



> **Note:**
>
> The timestamp information does not display after the error-control shell statements goto, iferror, and define.

Example

```
set timestamp on;
```

Echo

Display text or expand variables to the screen or to a log file. When used in scripts with spooling (log-file generation) turned on, echo expands variables in the log file. For interactive sessions, variables are not expanded in the log file; instead, the variable name you typed is recorded (for example, `$1`).

Syntax

```
echo <text> | <variablename>
```

Example

See examples of echo under the discussion of variables (MaxL Shell Syntax Rules and Variables).

Nesting

Reference (include) a MaxL script from within another MaxL script. You might use this if variables are defined in the referenced MaxL script which are useful to the current MaxL script.

Syntax

msh `<scriptfile>`;

Example

```
login fiona sunflower;
alter database sample.basic end archive;
msh calculate.msh;
alter database sample.basic
 begin archive to file bak;
 logout;
```

Notes

Variables defined or changed in a nested script persist into the parent script after the nested script executes.

Because msh is a shell command, it is limited to the originating session. Therefore, you should not reference MaxL scripts that contain new login statements.

Error Checking and Branching

IfError instructs the MaxL Shell to respond to an error in the previous statement by skipping subsequent statements, up to a certain location in the script that is defined by a label name.

IfError checks the presence of errors only in the precedent statement. IfError checks for:

- Errors in MaxL statement execution
- Errors in MaxL Shell command execution, including:
  - Errors in `spool on/off`, such as permission errors
  - Errors in `set column_width`, such as invalid widths
  - Errors in script nesting, such as permission errors or nonexistent include files

Goto forces the MaxL Shell to branch to a certain location in the script defined by a label name; goto is not dependent on the occurence of an error.

Syntax

```
iferror LABELNAME
goto LABELNAME
define label LABELNAME
```

Example: Iferror (MaxL)

The following example script contains a dimension build statement and a data load statement. If the dimension build fails, the data load is skipped.

```
login $1 $2;
```

```
import database sample.basic dimensions
 from data_file 'C:\\data\\dimensions.txt'
 using rules_file 'C:\\\\data\\rulesfile.rul'
 on error append to 'C:\\\\logs\\dimbuild.log';

iferror 'dimbuildFailed';

import database sample.basic data from data_file
"$ARBORPATH\\app\\sample\\basic\\calcdat.txt"
 on error abort;

define label 'dimbuildFailed';
exit;
```

Example: Iferror (MaxL Shell)

The following example script tests various errors including MaxL Shell errors, and demonstrates how you can set the exit status variable to a nonzero argument to return an exit status to the MaxL Shell.

```
###  Begin Script ###

login $1 $2;
echo "Testing syntactic errors...";

spool on to spool.out;

set timestamp on;
iferror 'End';

msh "doesnotexistlerr.mxl";
iferror 'FileDoesNotExistError';

echo "Script completed successfully...";
spool off;
logout;
exit 0;


define label 'FileDoesNotExistError';
echo "Error detected: Script file does not exist";
spool off;
logout;
exit 1;

define label 'ShellError';
echo ' Shell error detected...';
spool off;
logout;
exit 2;

define label 'End';
echo ' Syntax error detected...';
spool off;
logout;
exit 3;
```

```
###  End Script ###
```

Example: Goto

The following example script contains a dimension build statement and a data load statement. Goto is used to skip the data load.

```
login $1 $2;

import database sample.basic dimensions
 from data_file 'C:\\data\\dimensions.txt'
 using rules_file 'C:\\\\data\\rulesfile.rul'
 on error append to 'C:\\\\logs\\dimbuild.log';

goto 'Finished';

import database sample.basic data from data_file
"$ARBORPATH\\app\\sample\\basic\\calcdat.txt"
 on error abort;

define label 'Finished';
exit;
```

Notes

The MaxL Shell will skip forward in the script to LABELNAME but not backwards.

Version

To see which version of MaxL you are using, type **version**.

Example

```
version;
```

Logout

Log out from Essbase without exiting the interactive MaxL Shell.

Example

```
logout;
```

Exit

Exit from the `MAXL>` prompt after using interactive mode. You can optionally set the exit status variable to a non zero argument to return an exit status to the parent shell.

> **Note:**
>
> It is not necessary to exit at the end of MaxL script files or stream-oriented input (using the -i switch).

Example

```
exit 10;
```

Closes the MaxL Shell window or terminal with a return status of 10. You can use this in combination with IfError to return a non zero error status to the parent shell.

MaxL Shell and Unicode

MaxL Shell is in native mode when started in interactive mode.

MaxL Shell is in native mode when processing a script without a UTF8 byte header.

MaxL Shell is in UTF8 mode when processing a script with the UTF8 byte header.

MaxL Shell Syntax Rules and Variables

The MaxL Shell requires semicolon terminators at the end of MaxL statements. You can work with variables in MaxL scripts to make them more flexible. Learn the quoting and special characters rules for MaxL Shell to ensure that your MaxL scripts for Essbase work as expected.

The MaxL Shell is a pre-parser mechanism for entering MaxL statements. The following syntax information can help you use the MaxL Shell successfully.

Semicolons

When a MaxL statement is passed to Essbase Server interactively or in batch mode via the MaxL Shell, it must be terminated by a semicolon. Semicolons are used only to tell essmsh when to terminate the statement; semicolons are not part of the MaxL language itself. Therefore, when issuing MaxL statements programmatically, do *not* use semicolons.

Table 3-23 Semicolon Usage Examples in MaxL

Program	Example
Interactive MaxL Shell	`create application Sample;`

MaxL Shell script:	`login $1 identified by $2;`
	`create application Sample;`
	`create currency database Sample.Interntl;`
	`display database Sample.Interntl;`
	`exit;`

Variables

Overview of Variables in MaxL Shell

In the MaxL Shell, you can use **variables** as placeholders for any data that is subject to change or that you refer to often; for example, the name of a computer, user names, and passwords. You can use variables in MaxL scripts as well as during interactive use of the shell. Using variables in MaxL scripts eliminates the need to create many customized scripts for each user, database, or host.

Variables can be environment variables (for example, `$ESSBASEPATH`, which references the directory Essbase is installed to), positional parameters (for example, `$1`, `$2`, etc.), or locally defined shell variables.

All variables must begin with a `$` (dollar sign). Locally defined shell variables should be *set* without the dollar sign, but should be *referenced* with the dollar sign. Example:

```
set A = val_1;
echo $A;
val_1
```

> **Note:**
>
> Variables can be in parentheses. Example: if `$1 = arg1`, then `$(1)23 = arg123`.

Use double quotation marks around a string when you want the string interpreted as a single token with the variables recognized and expanded. For example, "$ESSBASEPATH" could be interpreted as `/scratch/user/oracle_home/essbase/products/Essbase/EssbaseServer`.

Use single quotation marks around a string to tell essmsh to recognize the string as a single token, *without* expanding variables. For example, `'$ESSBASEPATH'` is interpreted as `$ESSBASEPATH`, not `/scratch/user/oracle_home/essbase/products/Essbase/EssbaseServer`.

Environment Variables

You can reference any environment variable in the MaxL Shell.

Example (Unix): `spool on to "$ESSBASEPATH\\out.txt";`

Result: MaxL Shell session is recorded to `/scratch/user/oracle_home/essbase/products/Essbase/EssbaseServer/out.txt` .

Positional Parameters

Positional parameter variables are passed in to the shell at invocation time as arguments, and can be referred to generically by the subsequent script or interactive MaxL Shell session using $n, where n is the number representing the order in which the argument was passed on the command line.

For example, given the following invocation of the MaxL Shell,

```
essmsh filename Fiona sunflower
```

and the following subsequent login statement in that session,

```
login $1 identified by $2 on $COMPUTERNAME;
```

- `$COMPUTERNAME` is a Windows environment variable.
- `$1` and `$2` refer to the user name and password passed in as arguments at invocation time.

The values of positional parameters can be changed within a session. For example, if the value of `$1` was originally `Fiona` (because essmsh was invoked with `Fiona` as the first argument), you can change it using the following syntax:`set 1 = arg_new;`

> **Note:**
>
> If you nest MaxL Shell scripts or interactive sessions, the nested shell does not recognize positional parameters of the parent shell. The nested shell should be passed separate arguments, if positional parameters are to be used.

The file or process that the MaxL Shell reads from can be referred to with the positional parameter $0. Examples:

```
1) Invocation: essmsh filename
    $0 = filename
2) Invocation: program.sh | essmsh -i
    $0 = stdin
3) Invocation: essmsh
    $0 = null
```

Locally Defined Shell Variables

You can create variables of any name in the MaxL Shell without the use of arguments or positional parameters. These variables persist for the duration of the shell session, including in any nested shell sessions.

Example:

```
MaxL>login user1 identified by password1;
MaxL>set var1 = sample;
MaxL>echo $var1; /* see what the value of $var1 is */
sample
MaxL>display application $var1; /* MaxL displays application "sample" */
```

Locally defined variables can be named using alphabetic characters, numbers, and the underscore (_). Variable *values* can be any characters, but take note of the usual quoting and syntax rules that apply for the MaxL Shell.

Variables defined or changed in a nested script persist into the parent script after the nested script executes.

Quotation Marks and Variable Expansion

In the following examples, assume you logged in to the MaxL Shell interactively with arguments, as follows. In addition to these examples, see *Quoting and Special Characters Rules*.

```
essmsh -a Fiona sunflower sample basic login $1 $2;
```

Table 3-24 Quotation Marks' Usage and Effect on Variables in MaxL

Example	Return Value	Explanation
echo $1;	`Fiona`	$1 is expanded as the first invocation argument.
echo "$1's hat";	`Fiona's hat`	$1 is expanded as the first invocation argument, and the special character ' is allowed because double quotation marks are used.
echo $3;	`sample`	$3 is expanded as the third invocation argument.
echo '$3';	`$3`	$3 is taken literally and not expanded, because it is protected by single quotation marks.
display database $3.$4;	Database `sample.basic` is displayed.	$3 and $4 are expanded as the third and fourth invocation arguments. `$3.$4` is interpreted as two tokens, which makes it suitable for DBS-NAME.
echo "$3.$4";	`sample.basic`, but interpreted as one token (NOT suitable for DBS-NAME, which requires two tokens).	$3 and $4 are expanded as the third and fourth invocation arguments, but the entire string is interpreted as a single token, because of the double quotation marks.

Exit Status Variable

A successful MaxL Shell operation should have an exit status of zero. Most unsuccessful MaxL Shell operations have an exit status number, usually 1. Exit status can be referred to from within the shell, using `$?`. For example,

```
MAXL> create application test1;
 OK/INFO - 1051061 - Application test1 loaded - connection established.
 OK/INFO - 1054027 - Application [test1] started with process id [234].
 OK/INFO - 1056010 - Application test1 created.
MAXL> echo $?;
0

MAXL> drop application no_such;
   ERROR - 1051030 - Application no_such does not exist.
MAXL> echo $?;
2
```

Quoting and Special Characters Rules

These rules are for MaxL Shell commands. Applicable commands include spool on/off, echo, and nesting.

Tokens Enclosed in Single Quotation Marks

Contents within single quotation marks are preserved as literal, without variable expansion.

Example: `echo '$3';`

Result: `$3`

Tokens Enclosed in Double Quotation Marks

Contents of double quotation marks are treated as a single token, and the contents are perceived as literal except that variables are expanded.

Example: `spool on to "$ESSBASEPATH\\out.txt";`

Result: MaxL Shell session is recorded to `/scratch/user/oracle_home/essbase/products/Essbase/EssbaseServer/out.txt`.

Example: `spool on to "Ten o'clock.txt"`

Result: MaxL Shell session is recorded to a file named `Ten o'clock.txt`

Use of Apostrophes (Single Quotation Marks)

Preserved if enclosed in double quotation marks. Otherwise, causes a syntax error.

Example: `spool on to "Ten o'clock.txt"`

Result: MaxL Shell session is recorded to a file named `Ten o'clock.txt`

Use of Backslashes

Backslashes must be enclosed in single or double quotation marks because they are special characters.

One backslash is treated as one backslash by the shell, but is ignored or treated as an escape character by MaxL. Two backslashes are treated as one backslash by the shell and MaxL.

- `'\ ' = \` (MaxL Shell)
- `'\ ' = (nothing)` (MaxL)
- `'\\' = \\` (MaxL Shell)
- `'\\' = \` (MaxL)

Example: `spool on to 'D:\output.txt'`

Result: MaxL Shell records output to `D:\output.txt`.

Example: `spool on to 'D:\\output.txt'`

Result: MaxL Shell records output to `D:\output.txt`.

Example: `import database sample.basic lro from directory "$APPDIR\app\sample-basic-lros";`

Result: Error. Import is a MaxL statement, and for MaxL, `'\'` is ignored.

Example: `import database sample.basic lro from directory "$APPDIR\\app\\sample-basic-lros";`

Result: MaxL imports LRO information to Sample.Basic from `$APPDIR\app\sample-basic-lros` (if you have an APPDIR variable defined).

Query Cancellation

You may need to cancel a MaxL query to Essbase.

To cancel a query running from MaxL Shell, use the Esc key.

Encryption

You can encrypt Essbase user and password information stored in MaxL scripts, using public and private keys.

The following MaxL Shell invocation generates a public-private key pair that you can use to encrypt a MaxL script.

Linux

```
startMAXL.sh -gk
```

Windows

```
startMAXL.bat -gk
```

The following MaxL Shell invocation encrypts the input MaxL script, obscuring user name and password, and changing the file extension to .mxls.

Linux

```
startMAXL.sh -E scriptname.mxl PUBLIC-KEY
```

Windows

```
startMAXL.bat -E scriptname.mxl PUBLIC-KEY
```

Nested scripts are also encrypted. To avoid this and encrypt only the base script, use `-Em`.

The following MaxL Shell invocation decrypts and executes the MaxL script.

Linux

```
startMAXL.sh -D scriptname.mxls PRIVATE-KEY
```

Windows

```
startMAXL.bat -D scriptname.mxls PRIVATE-KEY
```

The following invocation encrypts input data and returns it in encrypted form. This is useful if there is a need to manually prepare secure scripts.

Linux

```
startMAXL.sh -ep DATA PUBLIC-KEY
```

Windows

```
startMAXL.bat -ep DATA PUBLIC-KEY
```

The following invocation enables you to encrypt the base script while saving any nested scripts for manual encryption.

Linux

```
startMAXL.sh -Em scriptname.mxl PUBLIC-KEY
```

Windows

```
startMAXL.bat -Em scriptname.mxl PUBLIC-KEY
```

LoginAs

To facilitate creating scheduled reports with user-appropriate permissions, Essbase administrators can use LoginAs to impersonate another user during MaxL login.

Example of "log in as" statement:

```
loginas USER-NAME PASSWORD MIMICKED-USER-NAME [on HOST-NAME];
```

Example of "log in as" invocation method:

```
essmsh -la USER-NAME PASSWORD MIMICKED-USER-NAME [-s HOST-NAME]
```

Interactive example:

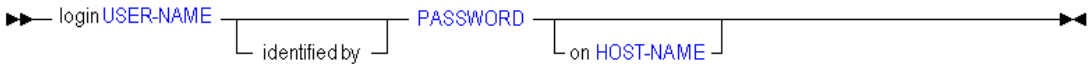
```
MAXL>loginas;
Enter UserName> username
Enter Password> password
Enter Host> machine_name
Enter UserName to Login As> mimicked_user_name
```

Login

Before you can send MaxL statements from the MaxL Shell to Essbase, you must log in to an Essbase Server session.

As a prerequisite to using MaxL, follow the client setup instructions in Manage Essbase Using the MaxL Client.

> **Note:**
>
> Before logging in to an Essbase Server session, you must start the MaxL Shell (see MaxL Invocation Summary, in MaxL Shell Commands). Or, you can start the MaxL Shell and log in at the same time (see `-l Flag: Login` at the same link).



- USER-NAME
- PASSWORD
- HOST-NAME

Example

For an independent deployment:

```
login admin pa5sw0rd on "https://myserver.example.com:9001/essbase/agent";
```

For a stack deployment on OCI:

```
login admin pa5sw0rd on "https://192.0.2.1:443/essbase/agent";
```

> **Note:**
>
> The Essbase system administrator logging in must have Identity Domain Administrator and Security Administrator role in the confidential identity application.

ESSCMD Script Conversion

Use the Essbase `cmd2mxl` utility if you need to convert ESSCMD shell scripts to MaxL scripts.

cmd2mxl is a fully supported utility for converting existing ESSCMD shell scripts to their corresponding MaxL scripts. To convert an ESSCMD shell script to a MaxL script, go to the operating-system command prompt and enter the executable name, the ESSCMD shell script name, the desired MaxL script name, and the name of a logfile to write to in case of errors.

- ESSCMD Script Utility Usage
- Things to Note About the ESSCMD shell Script Utility
- ESSCMD to MaxL Mapping

ESSCMD Script Utility Usage

```
cmd2mxl esscmd_script maxl_output logfile
```

For example, if the ESSCMD shell script name is `%ARBORPATH%\dailyupd.scr`, the command issued on the operating-system command line would be:

```
cmd2mxl %ARBORPATH%\dailyupd.scr %ARBORPATH%\dailyupd.mxl %ARBORPATH%
\log\dailyupd.log
```

Subsequently, the MaxL script can be executed using the MaxL Shell by the follwing command:

```
essmsh %ARBORPATH%\dailyupd.mxl
```

Things to Note About the ESSCMD shell Script Utility

1. The utility will only translate syntactically and semantically valid ESSCMD shell scripts.
2. For invalid ESSCMD shell scripts, the resulting MaxL script is undefined.
3. All ESSCMD shell statements in the scripts should end with a semicolon (;) statement terminator.
4. This utility will only work on Windows platforms.
5. Although most ESSCMD shell commands have corresponding MaxL statements, there are exceptions. For such exceptions, a comment will be generated in the logfile, and the resulting MaxL script will have to be modified to work correctly. Note that if an ESSCMD shell command is still needed, it can be invoked from a MaxL script using `shell esscmd <scriptname>`.
6. All strings in the ESSCMD shell scripts should be surrounded by double quotation marks ("").

ESSCMD to MaxL Mapping

The following table compares ESSCMD shell usage to MaxL usage, and the following conversions are supported by **cmd2mxl**.

Table 3-25 ESSCMD shell to MaxL Mapping

ESSCMD shell Command	ESSCMD shell Usage Example	MaxL Equivalent Example
ADDUSER	ADDUSER finance essexer1;	N/A. User management statements no longer supported in MaxL.
BEGINARCHIVE	beginarchive sample basic "test.txt";	alter database Sample.Basic begin archive to file 'test.txt';
BEGININCBUILDDIM	beginincbuilddim;	import database Sample.Basic dimensions from local text data_file 'c:\ \data.txt' using local rules_file 'c:\ \data_rule.rul' on error write to 'c:\ \error.log';
BUILDDIM	builddim 1 "c:\data_rul.rul" 3 "c:\data.txt" 4 "c:\error.log";	Same as BEGININCDIMBUILD
CALC	calc "CALC ALL;";	execute calculation 'CALC ALL' on sample.basic;
CALCDEFAULT	calcdefault;	execute calculation default on Sample.Basic;
CALCLINE	calcline "CALC ALL;";	execute calculation 'CALC ALL;' on sample.basic;
COPYAPP	copyapp sample sampnew;	create application sampnew as sample;
COPYDB	copydb sample basic sample basic2;	create or replace database sample.basic2 as sample.basic;
COPYFILTER	copyfilter sample basic westwrite sample basic westmgr;	create filter sample.basic.westmgr as sample.basic.westwrite;
COPYOBJECT	copyobject "9" "sample" "basic" "calcdat" "sample" "basic" "calcdat2";	alter object sample.basic.calcdat of type text copy to 'sample.basic.calcdat2';
CREATEAPP	createapp finance;	create or replace application finance;
CREATEDB	createdb finance investor;	create or replace database finance.investor;

Table 3-25 (Cont.) ESSCMD shell to MaxL Mapping

ESSCMD shell Command	ESSCMD shell Usage Example	MaxL Equivalent Example
CREATEGROUP	creategroup managers;	N/A. User management statements no longer supported in MaxL.
CREATELOCATION	select sample basic; createlocation hq hqserver finance investor admin password;	alter system load application sample; alter application sample load database basic; create location alias hq from sample.basic to finance.investor at hqserver as admin identified by 'password';
CREATEUSER	createuser karen password;	N/A. User management statements no longer supported in MaxL.
CREATEVARIABLE	createvariable CurMnth localhost sample basic Jan;	alter database sample.basic add variable CurMnth 'Jan'; alter application sample add variable CurMnth 'Jan'; alter system add variable CurMnth 'Jan';
DELETEAPP	deleteapp sampnew;	drop application sampnew cascade;
DELETEDB	deletedb demo basic;	drop database demo.basic;
DELETEGROUP	deletegroup engg;	N/A. User management statements no longer supported in MaxL.
DELETELOCATION	select finance investor; deletelocation hq1;	alter system load application finance; alter application finance load database investor; drop location alias finance.investor.hq1;
DELETELOG	deletelog sample;	alter application sample clear logfile;
DELETEUSER	deleteuser rob;	N/A. User management statements no longer supported in MaxL.
DELETEVARIABLE	select sample basic; deletevariable CurMnth "localhost";	alter system load application sample; alter application sample load database basic; alter database sample.basic drop variable CurMnth; alter application sample drop variable CurMnth; alter system drop variable CurMnth;
DISABLELOGIN	disablelogin demo;	alter application demo disable connects;
DISPLAYALIAS	select sample basic; displayalias "default";	query database sample.basic list alias_names in alias_table 'Default';
ENABLELOGIN	enablelogin demo;	alter application demo enable connects;
ENDARCHIVE	endarchive sample basic;	alter database sample.basic end archive;
ENDINCBUILDDIM	ENDINCBUILDDIM;	See BEGININCBUILDDIM
ESTIMATEFULLDBSIZE	select sample basic; estimatefulldbsize;	query database sample.basic get estimated size;
EXIT	exit;	exit;

Table 3-25 (Cont.) ESSCMD shell to MaxL Mapping

ESSCMD shell Command	ESSCMD shell Usage Example	MaxL Equivalent Example
EXPORT	select sample basic; export "c:\data.txt" 1;	alter system load application sample; alter application sample load database basic; export database Sample.Basic all data to data_file 'c:\\data.txt';
GETALLREPLCELLS	select samppart company; getallreplcells "svr2" "sampeast" "east";	alter system load application samppart; alter application samppart load database company; refresh replicated partition samppart.company from sampeast.east at svr2;
GETAPPINFO	getappinfo "demo";	display application demo;
GETAPPSTATE	getappstate demo;	display application demo;
GETATTRIBUTESPECS	select sample basic; getattributespecs;	query database sample.basic get attribute_spec;
GETATTRINFO	select sample basic; getattrinfo "Caffeinated_True";	query database sample.basic get attribute_info 'Caffeinated_True';
GETDBINFO	select sample basic; getdbinfo;	display database sample.basic request_history;
GETDBSTATE	getdbstate sample basic;	display database sample.basic;
GETDBSTATS	select sample basic; getdbstats;	query database sample.basic get dbstats data_block;
GETCRRATE	getcrrate;	query database sample.basic get currency_rate;
GETDEFAULTCALC	select sample basic; getdefaultcalc;	query database sample.basic get default calculation;
GETMBRCALC	select sample basic; getmbrcalc "Profit %";	query database sample.basic get member_calculation 'Profit %';
GETMBRINFO	select sample basic; getmbrinfo "Ounces_20";	query database sample.basic get member_info 'Ounces_20';
GETPERFSTATS	select sample basic; getperfstats;	query database sample.basic get performance statistics kernel_cache table;
GETUPDATEDREPLCELLS	See GETALLREPLCELLS	See GETALLREPLCELLS
GETUSERINFO	getuserinfo admin;	display user admin;
GETVERSION	getversion;	version;
IMPORT	select sample basic; import 1 "c:\data.txt" 4 y 3 "c:\import.rul" n "c:\data_load.err";	alter system load application sample; alter application sample load database basic; import database sample.basic data from local text data_file 'c:\\data.txt' using local rules_file 'c:\\data_rule.rul' on error write to 'c:\\data_load.err';
INCBUILDDIM	See BEGININCBUILDDIM	See BEGININCBUILDDIM

Table 3-25 (Cont.) ESSCMD shell to MaxL Mapping

ESSCMD shell Command	ESSCMD shell Usage Example	MaxL Equivalent Example
LISTALIASES	select sample basic; listaliases;	query database sample.basic list alias_table;
LISTAPP	listapp;	display application all;
LISTDB	listdb;	display database all;
LISTFILES	listfiles "" "sample" "basic";	query database sample.basic list all file information;
LISTFILTERS	listfilters sample basic;	display filter on database Sample.Basic;
LISTGROUPS	listgroups;	display group all;
LISTGROUPUSERS	listgroupusers finance;	display user in group finance;
LISTLINKEDOBJECTS	select sample basic; listlinkedobjects "Fiona" "07/07/2003";	query database sample.basic list lro by Fiona before '07/07/2003';
LISTLOCATIONS	select sample basic; listlocations;	alter system load application sample; alter application sample load database basic; display location alias on database sample.basic;
LISTLOCKS	listlocks;	display lock;
LISTLOGINS	listlogins;	display session all;
LISTOBJECTS	listobjects "2" "Sample" "Basic";	display object of type calc_script on database sample.basic;
LISTUSERS	listusers;	display user all;
LISTVARIABLES	listvariables localhost sample basic;	display variable on database sample.basic;
LOADALIAS	select sample basic; loadalias "special_flavors" "C:\Hyperion\products\Essbase\EssbaseServer\app\sample\basic\seasonal.txt";	alter database sample.basic load alias_table 'special_flavors' from data_file "$ARBORPATH\\app\\sample\\basic\\seasonal.txt";
LOADAPP	loadapp sample;	alter system load application sample;
LOADDB	loaddb sample basic;	alter application sample load database basic;
LOADDATA	select sample basic; loaddata 3 "c:\data.txt";	alter system load application sample; alter application sample load database basic; import database sample.basic data from local text data_file 'c:\\data.txt' on error abort;
LOGIN	login local admin password;	login admin 'password' on local;
LOGOUT	logout;	logout;
LOGOUTALLUSERS	logoutallusers y;	alter system logout session all;
LOGOUTUSER	Available only in interactive ESSCMD shell sessions.	alter system logout session 4294967295;
OUTPUT	output 1 c:\test.log; output 4;	spool on to 'c:\test.log'; spool off;
PURGELINKEDOBJECTS	purgelinkedobjects "Fiona" "07/07/2002";	alter database sample.basic delete lro by 'fiona' before '07/07/2002';

Table 3-25 (Cont.) ESSCMD shell to MaxL Mapping

ESSCMD shell Command	ESSCMD shell Usage Example	MaxL Equivalent Example
PUTALLREPLCELLS	select sampeast east; putallreplcells svr1 samppart company;	alter system load application sampeast; alter application sampeast load database east; refresh replicated partition sampeast.east from samppart.company at svr1 updated data;
PUTUPDATEDREPLCELLS	See PUTALLREPLCELLS	See PUTALLREPLCELLS
REMOVELOCKS	removelocks "2";	drop lock held by Fiona;
REMOVEUSER	removeuser finance steve;	N/A. User management statements no longer supported in MaxL.
RENAMEAPP	renameapp sample newsamp1;	alter application sample rename to newsamp1;
RENAMEDB	renamedb sample basic newbasic;	alter database sample.basic rename to newbasic;
RENAMEFILTER	renamefilter sample basic westmgr allwest;	create or replace filter sample.basic.westmgr as sample.basic.allwest; drop filter sample.basic.westmgr;
RENAMEOBJECT	RENAMEOBJECT "9" "sample" "basic" "calcdat" "calcdat2";	alter object sample.basic.calcdat of type text rename to 'calcdat2';
RENAMEUSER	renameuser steve_m m_steve;	N/A. User management statements no longer supported in MaxL.
RESETDB	select sample basic; resetdb;	alter database sample.basic reset;
RESETPERFSTATS	resetperfstats enable;	alter database sample.basic set performance statistics enabled;
RUNCALC	The only command supported is the server based calc script execution. Select Sample.Basic; Runcalc 2 one;	execute calculation Sample.Basic.one;
RUNREPT	select sample basic; runrept 2 complex "c:\complex.out";	alter system load application sample; alter application load database basic; export database sample.basic using server report_file 'complex' to data_file 'c:\\complex.out';
SELECT	select sample basic;	alter system load application sample; alter application load database basic;
SETALIAS	select sample basic; setalias "long names";	alter database sample.basic set active alias_table 'Long Names';

Table 3-25 (Cont.) ESSCMD shell to MaxL Mapping

ESSCMD shell Command	ESSCMD shell Usage Example	MaxL Equivalent Example
SETAPPSTATE	setappstate sample "" y y 4 y y y y 1000 1000;	alter application sample enable startup; alter application sample enable autostartup; alter application sample set minimum permission manager; alter application sample enable connects; alter application sample enable commands; alter application sample enable updates; alter application sample enable security; alter application sample set lock_timeout after 1000 seconds; alter application sample set max_lro_file_size 1000 kb;
SETDBSTATE	setdbstate "" "Y" "Y" 4 3145728 "Y" "Y" "Y" "" "" 0 1048576 1025 "Y";	alter database sample.basic enable startup; alter database sample.basic enable autostartup; alter database sample.basic set minimum permission manager; alter database sample.basic set data_cache_size 3145728; alter database sample.basic enable aggregate_missing; alter database sample.basic enable two_pass_calc; alter database sample.basic enable create_blocks; alter database sample.basic set currency_conversion division; alter database sample.basic set index_cache_size 1048576; alter database sample.basic enable compression;
SETDBSTATEITEM	.	See the alter database statement.
SETDEFAULTCALC	select sample basic; setdefaultcalc "CALC ALL;";	alter database sample.basic set default calculation as 'CALC ALL';
SETDEFAULTCALCFILE	select sample basic; setdefaultcalcfile defcalc;	Create a calculation file in the server containing the calculation string. Then, **alter database sample.sasic set default calculation sample.basic.defcalc;** will set the default calculation.

Table 3-25 (Cont.) ESSCMD shell to MaxL Mapping

ESSCMD shell Command	ESSCMD shell Usage Example	MaxL Equivalent Example
SETMSGLEVEL	setmsglevel 2;	set message level all;
SETPASSWORD	setpassword steve newpass;	N/A. User management statements no longer supported in MaxL.
SHUTDOWNSERVER	shutdownserver local admin password;	login admin 'password' on local; alter system shutdown;
SLEEP	sleep 10;	shell sleep 10;
UNLOADALIAS	select sample basic; unloadalias "flavors";	alter database sample.basic unload alias_table 'flavors';
UNLOADAPP	unloadapp sample;	alter system unload application sample;
UNLOADDB	unloaddb sample basic;	alter application sample unload database basic;
UNLOCKOBJECT	unlockobject "1" "sample" "basic" "basic";	alter object 'sample.basic.basic' of type outline unlock;
UPDATE	select sample.basic update "Jan Sales '100-10' Florida Actual 220";	import database sample.basic from data_string 'Jan Sales 100-10 Florida Actual 220';
UPDATEFILE	updatefile 3 "c:\data.txt" 1;	same as LOADDATA;
UPDATEVARIABLE	updatevariable hot_product local sample basic "100-10";	alter system set variable 'hot_product' '100-10'; alter application sample set variable 'hot_product' "100-10"; alter database Sample.Basic set variable 'hot_product' '100-10';
VALIDATE	validate;	alter database sample.basic validate data to local logfile 'validation.txt';

Note:

This is part of the separate MaxL Shell grammar, not the MaxL language itself.

MaxL Reserved Words List

The following keywords are part of the MaxL grammar, and are reserved. If you intend to use any of these words as names or passwords in Essbase, you must enclose the word in single quotation marks.

```
abort
absolute_value
account_type
active
add
administrator
advanced
after
aggregate
aggregates
aggregate_assume_equal
aggregate_missing
aggregate_storage
aggregate_sum
aggregate_view
aggregate_use_last
algorithm
alias
alias_names
alias_table
all
all_users_groups
allocation
alloc_rule
allow
allow_merge
alter
alternate_rollups
amount
amountcontext
amounttimespan
any
append
application
application_access_type
apply
archive
archive_file
area
as
aso_level_info
at
attribute
attribute_calc
attribute_info
attribute_spec
attribute_to_base_member_association
auto_password
```

```
autostartup
b
backup_file
based
basis
basistimespan
basistimespanoptions
before
begin
bitmap
blocks
buffer_id
buffered
build
by
cache_pinning
cache_size
calc_formula
calc_script
calc_string
calculation
cascade
catalog
cell_status
change_file
clear
client
cnt_sempaphore
column_width
columns
combinebasis
commands
comment
commitblock
committed_mode
compact
compression
compression_info
config_values
connect
connects
consolidation
copy
copy_subvar
copy_useraccess
create
create_application
create_blocks
create_user
creation
creation_user
creditmember
cube_size_info
currency
currency_category
currency_conversion
```

```
currency_database
currency_member
currency_rate
custom
data
data_block
data_cache_size
data_file
data_file_cache_size
data_storage
data_string
database
database_synch
database_asynch
days
dbstats
debitmember
debug
default
definition_only
definitions
delete
designer
destroy
dimension
dimensions
direct
direction
directory
disable
disabled
disallow
discard_errors
disk
display
divideamount
division
drillthrough
dml_output
drop
dump
dynamic_calc
eas_loc
enable
enabled
encrypted
end
end_transaction
enforce
eqd
error
error_file
errors_to_highest
errors_to_location
errors_to_lowest
estimated
```

```
event
exact
excel
exceeds
excludedrange
execute
existing_views
export
export_directory
external
failed_sss_migration
fragmentation_percent
freespace
from
file
file_location
file_size
file_type
filter
filter_access
fixed_decimal
for
force
force_dump
formatted_value
function
gb
get
get_missing_cells
get_meaningless_cells
global
grant
group
group_id
ha_trace
held
high
hostname
identified
identify
ignore_missing_values
ignore_zero_values
immediate
implicit_commit
import
in
inactive
inactive_user_days
including
incremental
index
index_cache_size
index_data
index_page_size
information
initialize
```

```
input
instead
invalid_block_headers
invalid_login_limit
io_access_mode
kb
kernel_io
kernel_cache
kill
level
level0
license_info
linked
list
load
load_buffer
load_buffers
load_buffer_block
local
location
lock
lock_timeout
locked
log_level
logfile
login
logout
long
lotus_2
lotus_3
lotus_4
low
lro
macro
manager
mapped
max_disk_size
max_file_size
max_lro_file_size
mb
medium
member
member_alias_namespace
member_calculation
member_comment
member_data
member_fixed_length_data
member_formula
member_info
member_name_namespace
member_property
member_uda
member_uda_namespace
member_variable_length_data
merge
meta_read
```

```
metadata_only
migr_modified_access
miner
minimum
mining
minutes
missing_value
mode
model
move
multiple
multiplication
mutex
name
negativebasisoptions
never
no_access
none
non_unique_members
nonunicode_mode
note
nothing
numerical_display
object
objects
of
off
offset
on
only
opg_cache
opg_state
optional
optional_group
options
or
outline
outline_id
outline_paging_file
output
override
overview
partition
partition_file
partition_size
passive
password
password_reset_days
performance
permission
persistence
perspective
physical
pmml_file
ports
pov
```

```
pre_image_access
precision
preserve
preserve_groups
private
privilege
process
project
property
protocol
purge
query
query_data
query_tracking
range
read
recover
reference_cube
reference_cube_reg
refresh
region
registration
reregister
remote
remove
remove_zero_cells
rename
repair
repeatamount
replace
replay
replicated
replication_assume_identical
report_file
request
request_history
request_id
reset
resource_usage
restore
restructure
result
resync
retrieve_buffer_size
retrieve_sort_buffer_size
reverse
revoke
rle
round
row
rows
rules_file
runtime
runtime_info
save
scientific_notation
```

```
scope
score
script_file
seconds
security
security_backup
select
selecting
selection
self_session_info
semaphore
sequence_id_range
server
server_port
session
session_idle_limit
session_idle_poll
set
shared_services_native
short
shutdown
single
singlecell
size
size_limit
skip_to_next_amount
skip_missing
skip_negative
skip_zero
slice
sourceregion
spec
spinlock
splitbasis
spread
SSL
sss
sss_mode
sss_name
starting
startup
statistics
status
stop
stopping
storage
storage_info
structure_file
subtract
supervisor
suppress
sync
system
table
tablespace
target
```

```
targettimespan
targettimespanoptions
task
tb
template
text
thread
to
total_size
transactions
transformation
transparent
trigger
trigger_func
trigger_spool
two_pass_calc
type
uda
unicode
unicode_mode
unlimited
unload
unlock
update
updated
updates
use
user
username_as_password
using
validate
values
variable
vector
verification
version
view_file
views
volume
wait_for_resources
warn
when
with
wizard
worksheet
write
xml_file
zero_value
zeroamountoptions
zerobasisoptions
```

MaxL BNF

MaxL BNF notation is an optional alternative to railroad diagrams, for learning MaxL syntax for Essbase.

Key

```
{}      Alternatives (at least one required)
[]      Options (none required)
!!      Default option if none indicated
|       Separates options (OR)
[,...]  Comma-separated list (of previous item) allowed
[ ...]  Whitespace-separated list (of previous item) allowed
''      Literal
::=     "is defined as." Symbol to the left is to be replaced with expression
on the right
TERMINAL
%NON-TERMINAL%
```

alter application

```
alter application
{APP-Name
 {set
  {lock_timeout after INTEGER[!seconds!|minutes]
   |max_lro_file_size {unlimited|SIZE-STRING}
   |minimum permission %DBS-SYSTEM-ROLE%
   |variable VARIABLE-NAME STRING
   |cache_size SIZE-STRING
   |type unicode_mode
  }
 |{load|unload} database DBS-STRING
 |{enable|disable} {startup|autostartup|commands|updates|connects|security}
 |comment COMMENT-STRING
 |clear logfile
 |add variable VARIABLE-NAME [STRING]
 |drop variable VARIABLE-NAME
 |rename to APP-NAME
}

DBS-SYSTEM-ROLE::=
{no_access|read|write|execute|manager}
```

alter application (aggregate storage)

```
alter application
{APP-Name
 {set
  {
   |minimum permission %DBS-SYSTEM-ROLE%
   |variable VARIABLE-NAME STRING
   |cache_size SIZE-STRING
```

```
   |type unicode_mode
  }
 |{load|unload} database DBS-STRING
 |{enable|disable} {startup|autostartup|commands|updates|connects|security}
 |comment COMMENT-STRING
 |clear logfile
 |add variable VARIABLE-NAME [STRING]
 |drop variable VARIABLE-NAME
 |rename to APP-NAME
}

DBS-SYSTEM-ROLE::=
{no_access|read|write|execute|manager}
```

alter database enable|disable

```
alter database DBS-NAME
  {enable|disable}
   {
    two_pass_calc
    |aggregate_missing
    |startup
    |autostartup
    |compression
    |create_blocks
    |committed_mode
    |pre_image_access
   }
```

alter database set

```
alter database DBS-NAME
 set
   {
    retrieve_buffer_size SIZE-STRING
    |retrieve_sort_buffer_size SIZE-STRING
    |data_cache_size SIZE-STRING
    |index_cache_size SIZE-STRING
    |currency_database DBS-STRING
    |currency_member MEMBER-NAME
    |currency_conversion {division|multiplication}
    |minimum permission %DBS-SYSTEM-ROLE%
    |compression {rle|bitmap}
    |lock_timeout
     {
      immediate
      |never
      |after INTEGER {[!seconds!|minutes]}
     }
    |implicit_commit after INTEGER {blocks|rows}
    |variable VARIABLE-NAME STRING
    |default calculation {CALC-NAME-SINGLE|as calc_string CALC-STRING}
    |active alias_table ALT-NAME-SINGLE
    |performance statistics {enabled|disabled|mode to %PST-SPEC%}
    |note COMMENT-STRING
```

```
   }

DBS-SYSTEM-ROLE::=
 {no_access|read|write|execute|manager}

PST-SPEC::=
 {
  default
  |{medium|long} persistence {all|database|server} scope
 }
```

alter database misc

```
alter database DBS-NAME
 {
  reset [{all|data}]
  |validate
   {
    data to local logfile FILE-NAME
    |using {error_file FILE-NAME|default error_file}
   }
  |force restructure
  |load alias_table ALT-NAME-SINGLE from data_file FILE-NAME
  |unload alias_table ALT-NAME-SINGLE
  |add variable VARIABLE-NAME [STRING]
  |drop variable VARIABLE-NAME
  |delete lro
   {
    all
    |by USER-NAME
    |before DATE
    |by USER-NAME before DATE
   }
  |unlock all objects
  |begin archive to file FILE-NAME
  |end archive
  |[force] archive to file FILE-NAME
  |[force] restore from file FILE-NAME
  |replay transactions
   {
    after LOG-TIME
    |using sequence_id_range ID-RANGE
   }
  |rename to DBS-STRING
  |comment COMMENT-STRING
 }
```

alter database disk volumes

```
alter database DBS-NAME
 {
  {add|drop} disk volume VOLUME-NAME
  |set disk volume VOLUME-NAME
   {
    file_type {data|index|index_data}
```

```
    |file_size SIZE-STRING
    |partition_size {SIZE-STRING|unlimited}
   }
 }
```

alter database (aggregate storage)

```
alter database DBS-NAME
 {
  {enable|disable}
   {
    startup
    |autostartup
    |query_tracking
    |replication_assume_identical_outline
   }
  |set
   {
    retrieve_buffer_size SIZE-STRING
    |retrieve_sort_buffer_size SIZE-STRING
    |minimum permission %DBS-SYSTEM-ROLE%
    |variable VARIABLE-NAME STRING
    |active alias_table ALT-NAME-SINGLE
   }
  |reset [{all|data}]
  |clear
   {
    aggregates
    |data in region CUBE-AREA[,...][physical]
   }
  |compact outline
  |add variable VARIABLE-NAME [STRING]
  |drop variable VARIABLE-NAME
  |%LOAD-BUFFER-INIT%
  |destroy load_buffer with buffer_id BUFFER-ID[,...]
  |unlock all objects
  |rename to DBS-STRING
  |comment COMMENT-STRING
  |merge {all|incremental} data
  |begin archive to file FILE-NAME
  |end archive
 }

DBS-SYSTEM-ROLE::=
 {no_access|read|write|execute|manager}

LOAD-BUFFER-INIT::=
 initialize load_buffer with buffer_id BUFFER-ID[,...]
  [resource_usage RNUM][property PROPS][wait_for_resources]
```

alter drillthrough

```
alter drillthrough
 URL-NAME from xml_file FILE-NAME
```

```
 on '{'MEMBER-EXPRESSION'}'[,...]
 [allow_merge]
```

alter filter

```
alter filter FILTER-NAME
 add {no_access|read|write|meta_read} on MEMBER-EXPRESSION [,...]
```

alter group

```
alter group GROUP-NAME revoke filter FILTER-NAME
```

alter object

```
alter object OBJ-NAME of type %OBJ-TYPE%
 {rename to OBJ-NAME-SINGLE|unlock|[force]copy to OBJ-NAME}

 OBJ-TYPE::=
  outline
 |calc_script
 |report_file
 |rules_file
 |text
 |partition_file
 |lro
 |selection
 |wizard
 |eqd
 |outline_paging_file
 |worksheet
 |alias_table
```

alter partition

```
alter {transparent|replicated} partition DBS-NAME
 {to|from} DBS-NAME [at HOST-NAME]
 set{
  connect as USER-NAME identified by PASSWORD
  |hostname as HOST-NAME instead of HOST-NAME direction {single|all}
  |application as APP-NAME instead of APP-NAME direction {single|all}
  |database as DSB-STRING instead of DBS-STRING
 }
```

alter session

```
alter session set dml_output
 {
  [
   !default!
   |alias {on|off}
   |metadata_only {on|off}
   |cell_status {on|off}
   |numerical_display {!default!|fixed_decimal|scientific_notation}
```

```
   |precision PRECISION-DIGITS]
   |formatted_value {on|off}
   |get_missing_cells {on|off}
   |get_meaningless_cells {on|off}
  [,...]
 }
```

alter system

```
alter system
 {
  load application {all|APP-NAME}
  |unload application {all|APP-NAME} [no_force]
  |set
   {
    session_idle_limit {INTEGER[!seconds!|minutes]|none}
    |session_idle_poll {INTEGER[!seconds!|minutes]|none}
    |invalid_login_limit {INTEGER|none|}
    |inactive_user_days {INTEGER[days]|none}
    |password_reset_days {INTEGER[days]|none}
    |variable VARIABLE-NAME STRING
    |server_port begin at INTEGER end at INTEGER
   }
  |delete export_directory EXPORT-DIR
  |add variable VARIABLE-NAME[STRING]
  |drop variable VARIABLE-NAME
  |logout session %SESSION-SPEC% [force]
  |shutdown
  |kill request %SESSION-SPEC%
  |{enable|disable} unicode
  |reconcile[force]
 }



SESSION SPEC::=
 all
 |SESSION-ID
 |by user USER-NAME
  [
   on application APP-NAME
   |on database DBS-NAME
  ]
 |on application APP-NAME
 |on database DBS-NAME
```

alter system (aggregate storage)

```
alter system
 {
  load application {all|APP-NAME}
  |unload application {all|APP-NAME} [no_force]
  |set
```

```
   {
    session_idle_limit {INTEGER[!seconds!|minutes]|none}
    |session_idle_poll {INTEGER[!seconds!|minutes]|none}
    |invalid_login_limit {INTEGER|none|}
    |inactive_user_days {INTEGER[days]|none}
    |password_reset_days {INTEGER[days]|none}
    |variable VARIABLE-NAME STRING
    |server_port begin at INTEGER end at INTEGER
   }
  |add variable VARIABLE-NAME[STRING]
  |drop variable VARIABLE-NAME
  |logout session %SESSION-SPEC% [force]
  |shutdown
  |kill request %SESSION-SPEC%
  |reconcile [force]
 }



SESSION SPEC::=
 all
 |SESSION-ID
 |by user USER-NAME
  [
   on application APP-NAME
   |on database DBS-NAME
  ]
 |on application APP-NAME
 |on database DBS-NAME
```

alter tablespace (aggregate storage)

```
alter tablespace TABLSP-NAME
 {
  add file_location FILE-NAME
   [
    set max_file_size SIZE-STRING
    |set max_disk_size SIZE-STRING
    [,...]
   ]
  |alter file_location FILE-NAME
   [
    set max_file_size SIZE-STRING
    |set max_disk_size SIZE-STRING
    [,...]
   ]
  |drop file_location FILE-NAME
 }
```

alter trigger

```
alter trigger
 {
  TRIGGER-NAME {enable|disable}
```

```
  |on database DBS-NAME disable
 }
```

alter user

```
alter user
 {
  USER-NAME
   {
    |revoke filter FILTER-NAME
   }
```

create application

```
create [or replace] application APP-NAME
 [type {!nonunicode_mode!|unicode_mode}]
 [as APP-NAME]
 [comment COMMENT-STRING]
```

create application (aggregate storage)

```
create [or replace] application APP-NAME
 [type {!nonunicode_mode!|unicode_mode}]
 [using aggregate_storage]
 [as APP-NAME]
 [comment COMMENT-STRING]
```

create calculation

```
create [or replace] calculation CALC-NAME {CALC-STRING|as CALC-NAME}
```

create database

```
create [or replace] [currency] database DBS-NAME
 [using non_unique_members]
 [as DBS-NAME]
 [comment COMMENT-STRING]
```

create database (aggregate storage)

```
create [or replace] database DBS-NAME
 [using non_unique_members]
 [comment COMMENT-STRING]
```

create drillthrough

```
create drillthrough URL-NAME from xml_file FILE-NAME
 on '{'MEMBER-EXPRESSION [,...]'}'
 [level0 only]
```

create filter

```
create [or replace] filter FILTER-NAME
 {
  as FILTER-NAME
  |
   {
    no_access
    |read
    |write
    |meta_read
   }
    on MEMBER-EXPRESSION
    [,...]
 }
 [definition_only]
```

create function

```
create [or replace] function FUNC-NAME
 as JAVACLASS.METHOD
 [spec CALC-SPEC-STRING
  [comment COMMENT-STRING]
 ]
 [with property runtime]
```

create group

```
create group GROUP-NAME
  [type external]
```

create location alias

```
create [or replace] location alias
 {
  LOC-ALIAS-SINGLE from DBS-NAME
  |LOCATION-ALIAS-NAME
 }
 to DBS-NAME at HOST-NAME as USER-NAME identified by PASSWORD
```

create macro

```
create [or replace] macro MACRO-NAME
 [%MACRO-SIGNATURE%]
 as MACRO-EXPANSION
 [spec CALC-SPEC-STRING [comment COMMENT-STRING]]

MACRO-SIGNATURE::=
 '('
   {
    !any!
     |single
```

```
    |group
    |optional
    |optional_group
    [,...]
  }
')'
```

create replicated partition

```
create [or replace] replicated partition DBS-NAME
 %AREA-SPEC%
 {to|from}
 DBS-NAME [at HOST-NAME][as USER-NAME identified by PASSWORD]
 [using USER-NAME identified by PASSWORD for creation]
 [%AREA-SPEC%]
 [
  mapped
  {globally|AREA-ALIAS}
  '('MEMBER-NAME [,...]')'
  to '('MEMBER-NAME [,...]')'
  [,...]
 ]
 [outline {!direct!|reverse}]
 [comment COMMENT-STRING]
 [remote comment COMMENT-STRING]
 [update {allow|disallow}]
 [validate only]

AREA-SPEC::=
 area MEMBER-EXPRESSION [AREA-ALIAS] [ ...]
```

create transparent partition

```
create [or replace] transparent partition DBS-NAME
 %AREA-SPEC%
 {to|from}
 DBS-NAME [at HOST-NAME][as USER-NAME identified by PASSWORD]
 [using USER-NAME identified by PASSWORD for creation]
 [%AREA-SPEC%]
 [
  mapped
  {globally|AREA-ALIAS}
  '('MEMBER-NAME [,...]')'
  to '('MEMBER-NAME [,...]')'
  [,...]
 ]
 [outline {!direct!|reverse}]
 [comment COMMENT-STRING]
 [remote comment COMMENT-STRING]
 [validate only]

AREA-SPEC::=
 area MEMBER-EXPRESSION [AREA-ALIAS] [ ...]
```

create after-update trigger

```
create [or replace] after update trigger TRIGGER-NAME
 where CUBE-AREA [when CONDITION then ACTION][ ...] end
```

create on-update trigger

```
create [or replace] [!on update!] trigger TRIGGER-NAME
 [log_value {!OFF!|ON}]
 where CUBE-AREA
 [when CONDITION then ACTION][ ...]
 [else ACTION]
 end
```

create user

```
create user USER-NAME %EXTERNAL-USER-SPEC%
EXTERNAL-USER-SPEC::=
 type external
```

display application

```
display application [!all!|APP-NAME [message_level]]
```

display calculation

```
display calculation
 [
  !all!
  |CALC-NAME
  |on application APP-NAME
  |on database DBS-NAME
 ]
```

display database

```
display database
 [
  !all!
  |DBS-NAME
  |on application APP-NAME
 ]
 [request_history]
```

display disk volume

```
display disk volume
 [!all!|UNIQUE-VOL-NAME|on database DBS-NAME]
```

display drillthrough

```
display drillthrough
 {
  DBS-NAME [to FILE-NAME-PREFIX]
  |URL-NAME [to FILE-NAME]
 }
```

display filter

```
display filter [!all!|FILTER-NAME|on database DBS-NAME]
```

display filter row

```
display filter row [!all!|FILTER-NAME|on database DBS-NAME]
```

display function

```
display function [!all!|on system|on application APP-NAME|FUNC-NAME]
```

display location alias

```
display location alias [!all!|LOCATION-ALIAS-NAME|on application APP-NAME|on
database DBS-NAME]
```

display lock

```
display lock [!all!|on system|on application APP-NAME|on database DBS-NAME]
```

display macro

```
display macro [!all!|on system|on application APP-NAME|MACRO-NAME]
```

display object

```
display [locked] object
 [
  [!all!|of type %OBJ-TYPE%]
  [!on system!|on application APP-NAME|on database DBS-NAME]
  |OBJ-NAME of type %OBJ-TYPE%
 ]

OBJ-TYPE::=
 outline
 |calc_script
 |report_file
 |rules_file
 |text
 |patition_file
 |lro
```

```
 |selection
 |wizard
 |eqd
 |outline_paging_file
 |worksheet
 |alias_table
```

display partition

```
display partition [!all!|on database DBS-NAME][advanced]
```

display privilege

```
display privilege
 {
  user [!all!|USER-NAME]
  |group [!all!|GROUP-NAME]
 }
```

display session

```
display session
 [
  !all!
  |SESSION-ID
  |by user USER-NAME [on application APP-NAME|on database DBS-NAME]
  |on application APP-NAME
  |on database DBS-NAME
 ]
```

display system

```
display system
 [
  version
  |ports {in use|overview}
  |export_directory
  |license_info
  |security mode
  |configuration
   {
   |agent
   |network
   |errors
   |on database DBS-NAME
   }
  |message_level
 ]
```

display trigger

```
display trigger
 [
```

```
  !all!
  |on system
  |on application APP-NAME
  |on database DBS-NAME
  |TRIGGER-NAME
 ]
```

display trigger spool

```
display trigger_spool
 [
  !all!
  |on application APP-NAME
  |on database DBS-NAME
  |SPOOL-NAME
 ]
```

display variable

```
display variable
 [
  !all!
  |VARIABLE-NAME
  |on application APP-NAME
  |on database DBS-NAME
  |on system
 ]
```

drop application

```
drop application APP-NAME [cascade] [force]
```

drop calculation

```
drop calculation CALC-NAME
```

drop database

```
drop database DBS-NAME [force]
```

drop drillthrough

```
drop drillthrough URL-NAME
```

drop filter

```
drop filter FILTER-NAME
```

drop function

```
drop function FUNC-NAME
```

drop group

```
drop group GROUP-NAME
```

drop location alias

```
drop location alias LOCATION-ALIAS-NAME
```

drop lock

```
drop lock
 [
  !all!
  |[
    !on system!
    |on application APP-NAME
    |on database DBS-NAME
   ]
  [!all!|held by USER-NAME]
 ]
```

drop macro

```
drop macro MACRO-NAME
```

drop object

```
drop object OBJ-NAME of type %OBJ-TYPE% [force]

OBJ-TYPE::=
 outline
 |calc_script
 |report_file
 |rules_file
 |text
 |patition_file
 |lro
 |selection
 |wizard
 |eqd
 |outline_paging_file
 |worksheet
 |alias_table
```

drop partition

```
drop
 {transparent|replicated}
 partition DBS-NAME {from|to} DBS-NAME
 [at HOST-NAME][force]
```

drop trigger

```
drop trigger TRIGGER-NAME
```

drop trigger spool

```
drop trigger_spool {SPOOL-NAME|all on database DBS-NAME}
```

drop user

```
drop user USER-NAME
```

execute aggregate build

```
execute aggregate build on database DBS-NAME
 using
  {
   views VIEW-ID VIEW-SIZE [,...] with outline_id OUTLINE-ID
   |view_file VIEW-FILE-NAME
  }
```

execute aggregate process

```
execute aggregate process on database DBS-NAME
 [stopping when total_size exceeds STOPPING-VAL]
 [based on query_data]
 [{enable|!disable!} alternate_rollups]
```

execute aggregate selection

```
execute aggregate selection on database DBS-NAME
 [
  using views VIEW-ID[,...]
  with outline_id OUTLINE-ID
  [[!suppress!|force] display]
 ]
 [selecting INTEGER views]
 [stopping when total_size exceeds STOPPING-VAL]
 [based on query_data]
 [{dump|force_dump} to view_file VIEW-FILE-NAME]
 [{enable|!disable!} alternate_rollups]
```

execute allocation (aggregate storage)

```
execute allocation process on database DBS-NAME with
 {
  pov MDX-SET
  amount ALLOC-NUMERIC
  {
   [amountcontext MDX-TUPLE]
   [amounttimespan MDX-SET ]
  }
  target MDX-TUPLE
  {
   [targettimespan MDX-SET]
   [targettimespanoptions {!divideamout!|repeatamount}]
   [offset MDX-TUPLE]
   [debitmember MDX-MBR]
   [creditmember MDX-MBR]
  }
  range MDX-SET
  {
   [excludedrange MDX-SET]
   [basis MDX-TUPLE]
   [basistimespan MDX-SET]
   [basistimespanoptions {splitbasis|combinebasis}]
   [
    share
    |spread [{skip_missing|skip_zero|skip_negative},...]
   ]
  [zeroamountoptions {skip_to_next_amount|abort}]
  [zerobasisoptions
    {
     skip_to_next_amount
     |abort
    }
  ]
  [negativebasisoptions
    {
     skip_to_next_amount
     |abort
     |absolute_value
     |missing_value
     |zero_value
    }
  ]
  [round
    {INTEGER|MDX-NUMERIC}
    {
     discard errors
     |errors_to_lowest
     |errors_to_highest
     |errors_to_location MDX-TUPLE
    }
  ]
```

```
  [{!override!|add|subtract} values]
 }
```

execute calculation

```
execute calculation
 {
  CALC-NAME
  |CALC-NAME on database DBS-STRING
  |{CALC-STRING|default} on DBS-NAME
 }
```

execute calculation (aggregate storage)

```
execute calculation on database DBS-NAME with
local script_file FILE-NAME pov MDX-SET sourceregion MDX-SET
  {
   [target MDX-TUPLE]
   |[debitmember MDX-MBR]
   |[creditmember MDX-MBR]
   |[offset MDX-TUPLE]
  }
 [{!override!|add|subtract} values]
```

export data

```
export database DBS-NAME
 {
  [!all!|level0|input]
   data [anonymous] [in columns] to [!server!] data_file FILE-NAME[,...]
  |using [!local!|server] report_file FILE-NAME to data_file FILE-NAME
 }
```

export data (aggregate storage)

```
export database DBS-NAME
 {
  [!level0!|input]
   data [anonymous] to [!server!] data_file FILE-NAME[,...]
  |using [!local!|server] report_file FILE-NAME to data_file FILE-NAME
```

export lro

```
export databse DBS-NAME lro to
 [!server!|local] directory
{DBS-EXPORT-DIR|FULL-EXPORT-DIR}
```

export outline

```
export outline {DBS-NAME|FILE-NAME}
 {
```

```
  all dimensions
  |list dimensions '{'DIM-NAME'}'[,...]
 }
 [tree|with alias_table ALT-NAME-SINGLE]
 to xml_file FILE-NAME
```

export query_tracking

```
export query_tracking DBS-NAME to
  [!server!] file FILE-NAME
```

grant

```
grant
 {
  {create_application|create_user|no_access|administrator}
   [on system]
   |{no_access|manager} on application APP-NAME
   |{no_access||read|write|manager} on database DBS-NAME
   |filter FILTER-NAME
   |execute
    {
     CALC-NAME
     |{any|default}
       [
        !on system!
        |on application APP-NAME
        |on database DBS-NAME
       ]
  }
  to {USER-NAME|GROUP-NAME}
```

import data

```
import database DBS-NAME
 [using max_threads INTEGER]
 data
 {
  from
   [!local!|server]
   [!text!]
   data_file IMP-FILE
   [using [!local!|server] rules_file IMP-FILE]
  |from data_string STRING
  |connect as SQL-USR identified by SQL-PASS
   using [!local!|server] rules_file IMP-FILE
 }
 on error {{write|append}to FILE-NAME|abort}
```

import data (aggregate storage)

```
import database DBS-NAME data
 {
```

```
 from
  [!local!|server]
  [!text!]
  data_file IMP-FILE
  [using [!local!|server] rules_file IMP-FILE]
 |from data_string STRING
 |connect as SQL-USR identified by SQL-PASS
  using
  {
   [!local!|server] rules_file IMP-FILE
   |multiple rules_file RULE-FILE-NAME[,...]
    to load_buffer_block starting with buffer id BUFFER-ID
    on error {write to FILE-NAME|abort}
  }
 |from load_buffer with buffer_id BUFFER-ID[,...]
  [{!override!|add|subtract} values]
  [create slice]
  |override {all|incremental} data

  ]
}
 on error {{write|append}to FILE-NAME|abort}
```

import dimensions

```
import database DBS-NAME dimensions
 {
  from
   [!local!|server]
   [!text!] data_file IMP-FILE
   using[!local!|server] rules_file IMP-FILE
   [[!enforce!|suppress] verification]
   |connect as SQL-USR identified by SQL-PASS
   using[!local!|server] rules_file IMP-FILE
 }[,...]
 [
  !preserve all data!
  |preserve {level0|input} data
 ]
 on error {write|append} to FILE-NAME
```

import lro

```
import database DBS-NAME
 lro from [!local!|server] directory IMPORT-DIR
```

import query_tracking

```
import query_tracking DBS-NAME from
  [!server!] file FILE-NAME
```

query application

```
query application APP-NAME get cache_size
```

query application (aggregate storage)

```
query application APP-NAME
 {
  get cache_size
  |list aggregate_storage storage_info
 }
```

query archive file

```
query archive_file FILE-NAME {get overview|list disk volume}
```

query database

```
query database DBS-NAME
 {
  get
   {
    active_alias_table
    |attribute_info MEMBER-NAME
    |attribute_spec
    |currency_rate
    |dbstats {dimension|data_block}
    |default calculation
    |member_info MEMBER-NAME
    |member_calculation MEMBER-NAME
    |estimated size
    |performance statistics
     {
      kernel_io
      |kernel_cache
      |end_transaction
      |database_synch
      |database_asynch
      |dynamic_calc
     }
     table
   }
    |list
     {
      alias_table
      |alias_names in alias_table ALT-NAME-SINGLE
      |lro
       [
        !all!
        |by USER-NAME
        |before DATE
        |by USER-NAME before DATE
       ]
```

```
      |{all|data|index} file information
      |transactions
       [
        after LOG-TIME
        [[force] write to file PATHNAME_FILENAME]
       ]
     }
 }
```

query database (aggregate storage)

```
query database DBS-NAME
 {
  get
   {
    active_alias_table
    |attribute_info MEMBER-NAME
    |attribute_spec
    |cube_size_info
    |dbstats {dimension|data_block}
    |member_info MEMBER-NAME
    |opg_state of %OPG-SECTION% for dimension DIM-NAME
   }
   |list
    {
     |aggregate_storage runtime_info
     |aggregate_storage compression_info
     |aggregate_storage group_id_info
     |aggregate_storage slice_info
     |aggregate_storage uncommitted_transaction_info
     |alias_table
     |alias_names in alias_table ALT-NAME-SINGLE
     |existing_views [based on query_data
     |{!all!|data|index} file information
     |load_buffers
     |aso_level_info
    }
   |{dump|force_dump}
     existing_views to view_file VIEW-FILE-NAME
     [based on query_data]
 }
```

refresh custom definitions

```
refresh custom definitions on application APP-NAME
```

refresh outline

```
refresh outline on {transparent|replicated}
 partition DBS-NAME {to|from} DBS-NAME
 [at HOST-NAME]
 {
  purge outline change_file
  |apply all
```

```
  |apply nothing
  |%OTL-CHANGE-SPEC%
 }

OTL-CHANGE-SPEC::=
 apply on dimension
  {add|delete|rename|update|move}[...,]
 apply on member
  {add|delete|rename|move}[...,]
 apply on member_property  {
   account_type
   |alias
   |calc_formula
   |consolidation
   |currency_conversion
   |currency_category
   |data_storage
   |uda
  }[...,]
```

refresh replicated partition

```
refresh replicated partition DBS-NAME
 {to|from} DBS-NAME
 [at HOST-NAME]
 [[!all!|updated]data]
```

MaxL Use Cases

The following use cases demonstrate some Essbase tasks that can be streamlined using MaxL: creating an aggregate storage database, loading data into aggregate storage database using buffers, deleting a dangling partition definition, designing security filters based on metadata, and working with triggers to track state changes to a cube area.

- Creating an Aggregate Storage Sample Using MaxL
- Loading Data Using Buffers
- Listing Aggregate Storage Data Load Buffers
- Forcing Deletion of Partitions
- Metadata Filtering
- Examples of Triggers

Creating an Aggregate Storage Sample Using MaxL

The following sample MaxL script creates, loads data into, and aggregates an Essbase aggregate storage database that is based on Sample.Basic.

```
login $1 $2;

spool on to 'maxl_log.txt';

create or replace application Sample2 using aggregate_storage
```

```
 comment 'aggregate storage version of Sample';

create database Sample2.Basic2
 comment 'aggregate storage version of Sample Basic';

create or replace outline on aggregate_storage database Sample2.Basic2
 as outline on database sample.basic;

alter database Sample2.Basic2 initialize load buffer with buffer_id 1;

import database Sample2.Basic2 data
 from server data_file '/catalog/users/catalogUser/Data.txt'
 to load_buffer with buffer_id 1
 on error abort;

import database Sample2.Basic2 data from load_buffer with buffer_id 1;

execute aggregate process on database Sample2.Basic2
 stopping when total_size exceeds 1.9;

spool off;

logout;
```

Related MaxL Links

create application

create database

create outline

alter database (for ASO)

import data

execute aggregate process

Loading Data Using Buffers

The following example MaxL operations demonstrate how to use temporary load buffers to streamline data loading into an Essbase aggregate storage database.

If you use multiple Import Data (Aggregate Storage) statements to load data values to aggregate storage databases, you can significantly improve performance by loading values to a temporary data load buffer first, with a final write to storage after all data sources have been read.

While the data load buffer exists in memory, you cannot build aggregations or merge slices, as these operations are resource-intensive. You can, however, load data to other data load buffers, and perform queries and other operations on the database. There might be a brief wait for queries, until the full data set is committed to the database and aggregations are created.

The data load buffer exists in memory until the buffer contents are committed to the database or the application is restarted, at which time the buffer is destroyed. Even if the commit operation fails, the buffer is destroyed and the data is not loaded into the database.

Multiple data load buffers can exist on a single aggregate storage database. To save time, you can load data into multiple data load buffers at the same time by using separate MaxL Shell sessions. Although only one data load commit operation on a database can be active at any time, you can commit multiple data load buffers in the same commit operation, which is faster than committing buffers individually.

You can query the database for a list and description of the data load buffers that exist on an aggregate storage database. See Listing Aggregate Storage Data Load Buffers.

Examples:

- Example: Load Multiple Data Sources into a Single Data Load Buffer
- Example: Perform Multiple Data Loads in Parallel

Example: Load Multiple Data Sources into a Single Data Load Buffer

Assume there are three data files that need to be imported. With aggregate storage databases, data loads are most efficient when all data files are loaded using one import operation. Therefore, load buffers are useful when loading more than one data file.

1. Use Alter Database (Aggregate Storage) to create a load buffer.

```
alter database ASOsamp.Basic
initialize load_buffer with buffer_id 1;
```

2. Load data into the buffer, using the Import Data (Aggregate Storage) statement.

```
import database ASOsamp.Basic data
from server data_file 'file_1'
to load_buffer with buffer_id 1
on error abort;

import database ASOsamp.Basic data
from server data_file 'file_2'
to load_buffer with buffer_id 1
on error abort;

import database ASOsamp.Basic data
from server data_file 'file_3'
to load_buffer with buffer_id 1
on error abort;
```

3. Move the data from the buffer into the database.

```
import database ASOsamp.Basic data
from load_buffer with buffer_id 1;
```

   The data-load buffer is implicitly destroyed.

4. Assume that in Step 2, after loading 'file_2' into the load buffer, you decided not to load the data. Because the data is in a buffer and not yet in the database, you would simply use Alter Database (Aggregate Storage) to destroy the buffer without moving the data to the database.

```
alter database ASOsamp.Basic
destroy load_buffer with buffer_id 1;
```

Example: Perform Multiple Data Loads in Parallel

1. In one MaxL Shell session, load data into a buffer with an ID of 1:

```
alter database ASOsamp.Basic
initialize load_buffer with buffer_id 1 resource_usage 0.5;


import database ASOsamp.Basic data
from data_file "dataload1.txt"
to load_buffer with buffer_id 1
on error abort;
```

2. Simultaneously, in another MaxL Shell session, load data into a buffer with an ID of 2:

```
alter database ASOsamp.Basic
initialize load_buffer with buffer_id 2 resource_usage 0.5;


import database ASOsamp.Basic data
from data_file "dataload2.txt"
to load_buffer with buffer_id 2
on error abort;
```

3. When the data is fully loaded into the data load buffers, use one MaxL statement to commit the contents of both buffers into the database by using a comma separated list of buffer IDs:

```
import database ASOsamp.Basic data
from load_buffer with buffer_id 1, 2;
```

Related MaxL Links

alter database (for ASO)

query database (for ASO)

import data (for ASO)

Listing Aggregate Storage Data Load Buffers

The query database MaxL statement for ASO lists data load buffers that have been initialized to load data into an Essbase aggregate storage database.

Use the following MaxL statement to get a list and description of the data load buffers that exist on an aggregate storage database.

```
query database appname.dbname list load_buffers;
```

This statement returns the following information about each existing data load buffer:

Table 3-26 List Load Buffers MaxL Output Columns

Field	Description
buffer_id	ID of a data load buffer (a number between 1 and 4294967296).
internal	A Boolean that specifies whether the data load buffer was created internally by Essbase (TRUE) or by a user (FALSE).
active	A Boolean that specifies whether the data load buffer is currently in use by a data load operation.
resource_usage	The percentage (a number between .01 and 1.0 inclusive) of the aggregate storage cache that the data load buffer is allowed to use.
aggregation method	One of the methods used to combine multiple values for the same cell within the buffer: • AGGREGATE_SUM: Add values when the buffer contains multiple values for the same cell. • AGGREGATE_USE_LAST: Combine duplicate cells by using the value of the cell that was loaded last into the load buffer.
ignore_missings	A Boolean that specifies whether to ignore #MI values in the incoming data stream.
ignore_zeros	A Boolean that specifies whether to ignore zeros in the incoming data stream.

Related MaxL Link

query database (for ASO)

Forcing Deletion of Partitions

If you need to drop an Essbase database partition that is invalid, you can use the force in the MaxL drop partition statement.

The force keyword used at the end of the drop partition statement specifies that the source half of a partition definition should be dropped regardless of whether the target half is missing or invalid.

For example, in the following session, assume there is a partition definition between app1.source and app2.target, but the app2.target database has been dropped. An ordinary attempt to drop the partition definition fails:

```
MAXL> drop transparent partition app1.source to app2.target;

     OK/INFO - 1053012 - Object source is locked by user system.
     OK/INFO - 1051034 - Logging in user System.
     OK/INFO - 1051035 - Last login on Friday, January 10, 2005 2:28:09 PM.
       ERROR - 1051032 - Database target does not exist.
     OK/INFO - 1053013 - Object source unlocked by user system.
     OK/INFO - 1051037 - Logging out user system, active for 0 minutes.
```

In the second attempt, the **force** keyword allows the invalid source partition to be dropped:

```
MAXL> drop transparent partition app1.source to app2.target force;

   OK/INFO - 1053012 - Object source is locked by user system.
   OK/INFO - 1051034 - Logging in user System.
   OK/INFO - 1051035 - Last login on Friday, January 10, 2005 2:31:50 PM.
     ERROR - 1051032 - Database target does not exist.
   OK/INFO - 1051037 - Logging out user system, active for 0 minutes.
   OK/INFO - 1053013 - Object source unlocked by user system.
   OK/INFO - 1241125 - Partition dropped.
```

> **Note:**
>
> The force keyword only works to drop a partition definition when the source half of the partition definition remains valid. In other words, if the source database is deleted, the partition cannot be dropped from the dangling target.

Metadata Filtering

Metadata filtering enables an Essbase database administrator to remove certain outline members from a user's view. The MaxL create filter statement, indicating the MetaRead permission, is one way to set up a metadata filter.

Metadata filtering provides an additional layer of security in addition to data filtering. With metadata filtering, an administrator can remove outline members from a user's view, providing access only to those members that are of interest to the user.

When a filter is used to apply MetaRead permission on a member,

1. Data for all ancestors of that member are hidden from the filter user’s view.
2. Data *and* metadata (member names) for all siblings of that member are hidden from the filter user’s view.

Example

The following report script for Sample.Basic:

```
//Meta02.rep

<COLUMN (Year, Product)
<CHILDREN Cola

<ROW (Market)
<ICHILDREN West
!
```

under normal unfiltered conditions returns

```
      Year 100-10 Measures Scenario
California          3,498
Oregon                159
```

```
Washington            679
Utah                  275
Nevada                (18)
  West              4,593
```

But with the following filter granted to an otherwise read-access user,

```
 create or replace filter sample.basic.meta02
  meta_read on '"California","Oregon"'
 ;
```

the report script then returns:

```
      Year 100-10 Measures Scenario
California          3,498
Oregon                159
  West            #Missing
```

In summary, MetaRead permission on California and Oregon means that:

1. The affected user can see no data for ancestors of California and Oregon members. West data shows only #Missing (or #NoAccess, in a grid client interface).
2. The affected user can see no sibling metadata (or data) for siblings of California and Oregon. In other words, the user sees only the western states for which the filter gives MetaRead permission.

Overlapping Metadata Filter Definitions

You should define a MetaRead filter using multiple rows only when the affected member set in any given row (the metaread members and their ancestors) has no overlap with MetaRead members in other rows. Oracle recommends that you specify one dimension per row in filters that contain MetaRead on multiple rows. However, as long as there is no overlap between the ancestors and MetaRead members, it is still valid to specify different member sets of one dimension into multiple MetaRead rows.

For example, in Sample.Basic, the following filter definition has overlap conflicts:

Table 3-27 Sample Filter with Overlap Conflicts

Access	Member Specification
MetaRead	California
MetaRead	West

In the first row, applying MetaRead to California has the effect of allowing access to California but blocking access to its ancestors. Therefore, the MetaRead access to West is ignored; users who are assigned this filter will have no access to West.

If you wish to assign MetaRead access to West as well as California, then the appropriate method is to combine them into one row:

Table 3-28 Sample Filter with No Overlap Conflicts

Access	Member Specification
MetaRead	California,West

Related MaxL Links

create filter

alter filter

Examples of Triggers

Using MaxL and MDX together, create and manage triggers that enable you to track state changes to an Essbase cube area.

The following examples are based on the Sample.Basic database.

> **Note:**
>
> You cannot define a trigger that requires data from Dynamic Calc members or members from another partition.

Example 1: Tracking Sales for January

Example 1 tracks the Actual, Sales value for the following month, product, and region:

- January (Year dimension member Jan)
- Colas (Product dimension member 100)
- In the Eastern region (Market dimension member East)

When the current member being calculated is Jan, and when the Actual, Sales value of Colas for January exceeds 20, the example logs an entry in the file Trigger_jan_Sales.

```
create or replace trigger Sample.Basic.Trigger_Jan_20
Where
 {(Jan,Sales,[100],East,Actual)}
When
 Jan > 20 AND Is(Year.CurrentMember, Jan)
then spool Trigger_Jan_20
end;
```

Example 2: Tracking Sales for Quarter 1

Example 2 tracks the Actual, Sales value for the following months, product, and region:

- January, February, March (The children of Year dimension member Qtr1)
- Colas (Product dimension member 100)
- In the Eastern region (Market dimension member East)

When the current member being calculated is Jan, Feb or Mar, and when the Actual, Sales value of Colas for any of the the months January, February, or March exceeds 20, the example

logs an entry in the file Trigger_Jan_Sales_20, Trigger_Feb_Sales_20, or Trigger_Mar_Sales_20.

```
create or replace trigger Sample.Basic.Trigger_Qtr1_Sales
Where
Crossjoin(
 {Qtr1.children},
 {([Measures].[Sales], [Product].[100], [Market].[East], [Scenario].[Actual])}
 )
When
 Year.Jan > 20 and is(Year.currentmember, Jan)
then spool Trigger_Jan_Sales_20
When
 Year.Feb > 20 and is(Year.currentmember, Feb)
then spool Trigger_Feb_Sales_20
When
 Year.Mar > 20 and is(Year.currentmember, Mar)
then spool Trigger_Mar_Sales_20
end;
```

Example 3: Tracking Inventory Level

Example 3 tracks the inventory level for the following product, region, and months:

- Colas (product 100)
- In the eastern region (market East)
- For January, February, and March (the children of Qtr1)

If the inventory of Colas in the eastern region falls below 500,000, the example trigger sends an email to recipient@example.com.

```
create or replace trigger Sample.Basic.Inventory_east
where CrossJoin(
 {[Qtr1].children},
 {([East],[100],[Ending Inventory])}
)
when [Ending Inventory] < 500000 then
mail ([smtp_server.example.com],[sender@example.com],
        [recipient@example.com],
[Subject of E-Mail])
end;
```

Related MaxL Links

alter trigger

create trigger

display trigger

drop trigger

4

Report Writer

Report Writer is a text-based script language that you can use to report on data in Essbase cubes. You can combine selection, layout, and formatting commands to build a variety of reports.

With Report Writer, you can generate reports whose length or specialized format exceed the capabilities of some grid clients. You can also use it to export data.

Report Writer Syntax

This topic contains the following information:

Report Delimiters

The < or {} delimiters are required for most Report Writer commands. If you do not use a delimiter, Report Writer assumes that the command name is a member name.

Table 4-1 Report Writer Command Delimiters

Delimiter	Use in Report Writer:	Example
{}	Encloses report formatting commands	{**SUPFORMATS**}
<	Precedes layout and member sorting, selection, calculation, and some formatting commands	<**PAGE**

Syntax Guidelines

- Separate commands with at least one space, tab, or new line. Report processing is not affected by extra blank lines, spaces, or tabs.
- Enter commands in either upper or lowercase. Commands are not case sensitive. If the database outline is case-sensitive, then the member names used in the report script must match the outline.

- To start report processing, enter the ! report output command (exclamation point or "bang"), or one or more consecutive numeric values. You can place one or more report scripts, each terminated by its own ! command, in the same report file.
- You can group more than one format command within a single set of curly braces. For example, these formats are synonyms:

```
{UDATA SKIP}
{UDATA} {SKIP}
```

- Enclose member names that contain spaces or the member name "Default" in double quotes; for example, "Cost of Goods Sold" "Default".
- If a formatting command is preceded by three or more of the characters "=," "-," and "_," the Report Extractor assumes that the characters are extraneous underline characters and ignores them. For example, ===={SKIP 1}
- Use // (double slash) to indicate a comment. Everything on the line following a comment is ignored by the Report Writer. Each line of a comment must start with a double slash.

Referencing Static Members

You can enter static (non-changing) member names, such as Sales and COGS, directly into the report script. For static member names, use *staticMbrDefinition* syntax, as described below:

Command

A *staticMbrDefinition* specifies the member to select.

Syntax

mbrName [*mbrName*]

mbrName

Dimension or member name of member to specify. When specifying multiple member names, separate them with spaces. Enclose member names in double quotes if they contain spaces or consist of numbers. For example: "Cost of Goods Sold" or "100-10"

Description

A static member definition specifies a database outline member in a report specification. This definition does not automatically reflect changes to the database outline. If you change a member name in the database outline, you must manually update each report script associated with that outline.

Example

```
Year
```

Selects the member Year.

```
Sales "Cost_of_Goods_Sold"
```

Selects the members Sales and Cost_of_Goods_Sold.

Report Writer Command Groups

Report Writer is a text-based script language that you can use to report on data in Essbase cubes. You can combine selection, layout, and formatting commands to build a variety of reports.

This section lists all Report Writer commands, grouped by command type. The command groups correspond to the steps of report design:

- Report Layout Commands
- Data Range Commands
- Data Ordering Commands
- Member Selection and Sorting Commands
- Format Commands
- Column or Row Calculation Commands
- Member Names and Aliases

Report Layout Commands

A report layout is composed of items that make up the columns and rows of a page. Report layout commands provide column, page, and row layout, and include two commands that override the default method for interpreting column dimension member lists. Report Writer provides the following page layout commands:

- ASYM
- COLUMN
- PAGE
- ROW
- SYM

Data Range Commands

Data range commands restrict the range of data selected for your reports. Report Writer provides the following data range commands:

- BOTTOM
- RESTRICT
- TOP

Data Ordering Commands

Data ordering commands order data in your reports. Report Writer provides the following ordering command:

ORDERBY

Member Selection and Sorting Commands

Member selection commands enhance your selection options using member relationships based on the database outline. The Report Writer provides the following selection and sorting commands:

- ALLINSAMEDIM
- ALLSIBLINGS
- ANCESTORS
- ATTRIBUTE
- CHILDREN
- CURRENCY
- DESCENDANTS
- DIMBOTTOM
- DIMEND
- DIMTOP
- DUPLICATE
- IANCESTORS
- ICHILDREN
- IDESCENDANTS
- IPARENT
- LATEST
- LEAVES
- LINK
- MATCH
- OFSAMEGEN
- ONSAMELEVELAS
- PARENT
- SORTALTNAMES
- SORTASC
- SORTDESC
- SORTGEN
- SORTLEVEL
- SORTMBRNAMES
- SORTNONE
- TODATE
- UDA
- WITHATTR

Format Commands

These commands define the appearance of your data and your report. Each format command applies only to those output lines that *follow* the command.

- ACCON
- ACCOFF
- AFTER
- BEFORE
- BLOCKHEADERS
- BRACKETS
- COLHEADING
- COMMAS
- CURHEADING
- DECIMAL
- ENDHEADING
- EUROPEAN
- FEEDON
- FIXCOLUMNS
- FORMATCOLUMNS
- HEADING
- IMMHEADING
- INCEMPTYROWS
- INCFORMATS
- INCMASK
- INCMISSINGROWS
- INCZEROROWS
- INDENT
- INDENTGEN
- LMARGIN
- MASK
- MISSINGTEXT
- NAMESCOL
- NAMESON
- NAMEWIDTH
- NEWPAGE
- NOINDENTGEN
- NOPAGEONDIMENSION

- NOROWREPEAT
- NOSKIPONDIMENSION
- NOUNAMEONDIM
- ORDER
- OUTALTNAMES
- OUTMBRNAMES
- OUTPUT
- PAGEHEADING
- PAGELENGTH
- PAGEONDIMENSION
- PYRAMIDHEADERS
- QUOTEMBRNAMES
- RENAME
- ROWREPEAT
- SCALE
- SETCENTER
- SINGLECOLUMN
- SKIP
- SKIPONDIMENSION
- STARTHEADING
- SUPALL
- SUPBRACKETS
- SUPCOLHEADING
- SUPCOMMAS
- SUPCURHEADING
- SUPEMPTYROWS
- SUPEUROPEAN
- SUPFEED
- SUPFORMATS
- SUPHEADING
- SUPMASK
- SUPMISSINGROWS
- SUPNAMES
- SUPOUTPUT
- SUPPAGEHEADING
- SUPSHARE
- SUPSHAREOFF
- SUPZEROROWS

- TABDELIMIT
- TEXT
- UCHARACTERS
- UCOLUMNS
- UDATA
- UNAME
- UNAMEONDIMENSION
- UNDERLINECHAR
- UNDERSCORECHAR
- WIDTH
- ZEROTEXT

Column or Row Calculation Commands

These commands perform column and row calculations that let you create extra columns or rows in a report (not defined as part of the database outline) based on selected data members. Enclose all calculation commands and their arguments in curly { } braces.

- CALCULATE COLUMN
- CALCULATE ROW
- CLEARALLROWCALC
- CLEARROWCALC
- OFFCOLCALCS
- OFFROWCALCS
- ONCOLCALCS
- ONROWCALCS
- PRINTROW
- REMOVECOLCALCS
- SAVEANDOUTPUT
- SAVEROW
- SETROWOP

Member Names and Aliases

These commands allow you to set aliases or alternate names that can make reports easier to read and help your reader focus on the data values rather than the meanings of member (page, column, and row) names.

- REPALIAS
- REPALIASMBR
- REPMBR
- REPMBRALIAS
- REPQUALMBR

- OUTMBRALT
- OUTALTMBR
- OUTALT
- OUTALTNAMES
- OUTALTSELECT
- OUTPUTMEMBERKEY

You can use aliases to display members in a report:

- By alias alone. For example, display the name as Diet Cola rather than its corresponding member name 100-20.
- As a combination of member name and alias. For example, display the name as Diet Cola 100-20.

In addition, these report commands also control the display of member names and aliases.

- ALLINSAMEDIM
- CHILDREN
- DESCENDANTS
- GEN
- LEV
- SORTASC
- SORTALTNAMES
- SORTDESC
- SORTGEN
- SORTLEVEL
- SORTNONE

Examples of Report Scripts

The example Essbase Report Writer scripts in this section demonstrate report procedures and formats frequently required in business settings.

The samples use both the Demo Basic and Sample Basic cubes provided in the gallery.

The sample reports demonstrate the following techniques:

- Sample 1: Creating a Different Format for Each Page
- Sample 2: Handling Missing Values
- Sample 3: Nesting Columns
- Sample 4: Grouping Rows
- Sample 5: Reporting on Different Combinations of Data
- Sample 6: Formatting Different Combinations of Data
- Sample 7: Using Aliases
- Sample 8: Creating Custom Headings and % Characters
- Sample 9: Creating Custom Page Headings

Sample 1: Creating a Different Format for Each Page

This Essbase report script generates a report for each page member.

This sample report contains data for Actual Sales. Each report page shows a different Product. The report lists products on the same page until the maximum page length is reached. To place each Product on a separate page, you must use the PAGEONDIMENSION format command, as shown in Sample 2: Handling Missing Values.

Because none of the cities in South sell Stereo or Compact_Disc, the data values indicate `#MISSING`. You can represent missing values by suppressing the row or substituting a replacement text string, such as N/A. See Sample 2: Handling Missing Values for an example of substituting page breaks and labels for missing values.

```
                    Sales Actual Stereo

                       Qtr1     Qtr2     Qtr3     Qtr4
                   ======== ======== ======== ========
East                  7,839    7,933    7,673   10,044
West                 11,633   11,191   11,299   14,018
South             #Missing #Missing #Missing #Missing
Market               19,472   19,124   18,972   24,062

                  Sales Actual Compact_Disc

                       Qtr1     Qtr2     Qtr3     Qtr4
                   ======== ======== ======== ========
East                 10,293    9,702    9,965   11,792
West                 14,321   14,016   14,328   17,247
South             #Missing #Missing #Missing #Missing
Market               24,614   23,718   24,293   29,039

                       Sales Actual Audio

                       Qtr1     Qtr2     Qtr3     Qtr4
                   ======== ======== ======== ========
East                 18,132   17,635   17,638   21,836
West                 25,954   25,207   25,627   31,265
```

```
South                    #Missing #Missing #Missing #Missing
Market                     44,086   42,842   43,265   53,101
```

Use the following script to create Sample 1:

```
<PAGE (Accounts, Scenario, Product)
Sales
Actual
<IDESCENDANTS Audio

    <COLUMN (Year)
    <CHILDREN Year

<ROW(Market)
<ICHILDREN Market
    !
```

The **!** report output command is required to generate the report.

Because the IDESCENDANTS selection command is used for Audio, the report selects all three members. Only a single member is selected from the other page dimensions, Sales and Actual. As a result, the script creates three report pages. They display as one long report page unless you use the PAGEONDIMENSION format command, as shown in Sample 2: Handling Missing Values.

Sample 2: Handling Missing Values

This Essbase report script sample shows you how to use page breaks and labels for missing values.

This report has the same layout and member selection as Sample 1.

```
                         Sales Actual Stereo

                    Qtr1     Qtr2     Qtr3     Qtr4
                ======== ======== ======== ========
East               7,839    7,933    7,673   10,044
West              11,633   11,191   11,299   14,018
South                N/A      N/A      N/A      N/A
  Market          19,472   19,124   18,972   24,062


                      Sales Actual Compact_Disc

                    Qtr1     Qtr2     Qtr3     Qtr4
                ======== ======== ======== ========
East              10,293    9,702    9,965   11,792
West              14,321   14,016   14,328   17,247
South                N/A      N/A      N/A      N/A
  Market          24,614   23,718   24,293   29,039


                         Sales Actual Audio
```

```
                          Qtr1     Qtr2     Qtr3     Qtr4
                       ======== ======== ======== ========
East                     18,132   17,635   17,638   21,836
West                     25,954   25,207   25,627   31,265
South                       N/A      N/A      N/A      N/A
  Market                 44,086   42,842   43,265   53,101
```

Use the following script to create Sample 2:

```
<PAGE (Accounts, Scenario, Product)
Sales
Actual
<IDESCENDANTS Product
{ PAGEONDIMENSION Product }
{ MISSINGTEXT "N/A" }

      <COLUMN (Year)
      <CHILDREN Year

<ROW(Market)
<ICHILDREN Market
    !
```

The PAGEONDIMENSION format command creates a page break whenever a member from the specified dimension changes. Because the report selects eight Product members, the report is eight pages long.

The MISSINGTEXT format command substitutes any strings enclosed within double quotes into the `#MISSING` string. To suppress missing values, use the SUPMISSINGROWS command.

You can also combine format commands within one set of braces:

```
{ PAGEONDIMENSION Product MISSINGTEXT "N/A" }
```

Sample 3: Nesting Columns

This Essbase report script sample demonstrates how to nest columns and suppress missing rows from the output.

Each page produced by this report sample contains Sales information for a given Market. The report has two groups of columns across the page. The Actual and Budget members are the nested column group below Year members.

Note that the Actual and Budget members are on the same line in the report. You can put multiple commands on one line, but report commands are easier to read if they are spread out.

```
                                    Sales East

                     Jan                Feb                Mar
Qtr1
                Actual  Budget  Actual  Budget  Actual  Budget  Actual
Budget
               ======= ======= ======= ======= ======= ======= =======
=======
```

```
Stereo          2,788   2,950   2,482   2,700   2,569   2,700   7,839
8,350
Compact_Disc    3,550   3,450   3,285   3,250   3,458   3,250  10,293
9,950
  Audio         6,338   6,400   5,767   5,950   6,027   5,950  18,132
18,300
Television      5,244   4,800   4,200   4,300   3,960   4,300  13,404
13,400
VCR             4,311   4,200   3,734   3,700   3,676   3,700  11,721
11,600
Camera          2,656   2,850   2,525   2,670   2,541   2,670   7,722
8,190
  Visual       12,211  11,850  10,459  10,670  10,177  10,670  32,847
33,190
    Product    18,549  18,250  16,226  16,620  16,204  16,620  50,979  51,490
```

Sales West

	Jan		Feb		Mar		Qtr1	
	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget
Stereo	4,102	4,000	3,723	3,600	3,808	3,600	11,633	11,200
Compact_Disc	4,886	4,700	4,647	4,400	4,788	4,400	14,321	13,500
Audio	8,988	8,700	8,370	8,000	8,596	8,000	25,954	24,700
Television	5,206	5,100	4,640	4,600	4,783	4,600	14,629	14,300
VCR	4,670	4,650	4,667	4,200	4,517	4,200	13,854	13,050
Camera	3,815	4,050	3,463	3,750	3,478	3,750	10,756	11,550
Visual	13,691	13,800	12,770	12,550	12,778	12,550	39,239	38,900
Product	22,679	22,500	21,140	20,550	21,374	20,550	65,193	63,600

/pre>

Sales South

	Jan		Feb		Mar		Qtr1	
	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget
Television	3,137	3,400	2,929	3,100	2,815	3,100	8,881	9,600
VCR	3,225	3,400	3,206	3,100	3,120	3,100	9,551	9,600
Camera	2,306	2,400	2,167	2,400	2,168	2,400	6,641	7,200
Visual	8,668	9,200	8,302	8,600	8,103	8,600	25,073	26,400
Product	8,668	9,200	8,302	8,600	8,103	8,600	25,073	26,400

Sales Market

	Jan		Feb		Mar		Qtr1	
	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget
Stereo	6,890	6,950	6,205	6,300	6,377	6,300	19,472	19,550
Compact_Disc	8,436	8,150	7,932	7,650	8,246	7,650	24,614	23,450
Audio	15,326	15,100	14,137	13,950	14,623	13,950	44,086	43,000

```
Television   13,587  13,300  11,769  12,000  11,558  12,000  36,914  37,300
VCR          12,206  12,250  11,607  11,000  11,313  11,000  35,126  34,250
Camera        8,777   9,300   8,155   8,820   8,187   8,820  25,119  26,940
  Visual     34,570  34,850  31,531  31,820  31,058  31,820  97,159  98,490
    Product  49,896  49,950  45,668  45,770  45,681  45,770 141,245 141,490
```

Use the following script to create Sample 3:

```
<PAGE (Accounts, Market)
Sales
<ICHILDREN Market
{ PAGEONDIMENSION Market }
{ SUPMISSINGROWS }
      <COLUMN (Year, Scenario)
      <ICHILDREN Qtr1
       Actual Budget
<ROW(Product)
<IDESCENDANTS Product
    !
```

The report selects four Markets because the <ICHILDREN command is applied to Market. Only Sales is selected from the other page dimension, so the report has four pages.

For the South, all the rows of Product data are not displayed. Recall that the cities in the South do not sell every Product. The report uses the SUPMISSINGROWS format command to suppress the output of any member rows with all missing values.

Sample 4: Grouping Rows

This Essbase report script sample shows how to group rows to include two dimensions down the page.

Each page of this report contains Sales information for a given Market. The report page contains members for both Product and Year as groups of rows down the page. This script creates a four-page report because the page dimensions and their member selections are the same as in Sample 3: Nesting Columns. The row and column layout is switched because the row and column dimensions are different. This section shows a representative part of the output.

```
                                      Sales East
                                Actual   Budget Variance
                               ======== ======== ========

Stereo                  Qtr1      7,839    8,350     (511)
                        Qtr2      7,933    8,150     (217)
                        Qtr3      7,673    8,350     (677)
                        Qtr4     10,044   10,400     (356)
                          Year   33,489   35,250   (1,761)
Compact_Disc            Qtr1     10,293    9,950      343
                        Qtr2      9,702    9,750      (48)
                        Qtr3      9,965   10,050      (85)
                        Qtr4     11,792   12,550     (758)
                          Year   41,752   42,300     (548)
  Audio                 Qtr1     18,132   18,300     (168)
                        Qtr2     17,635   17,900     (265)
```

	Qtr3	17,638	18,400	(762)
	Qtr4	21,836	22,950	(1,114)
	Year	75,241	77,550	(2,309)
Television	Qtr1	13,404	13,400	4
	Qtr2	12,115	12,900	(785)
	Qtr3	15,014	14,200	814
	Qtr4	17,861	17,300	561
	Year	58,394	57,800	594
VCR	Qtr1	11,721	11,600	121
	Qtr2	10,999	11,100	(101)
	Qtr3	13,217	11,800	1,417
	Qtr4	14,386	14,900	(514)
	Year	50,323	49,400	923
Camera	Qtr1	7,722	8,190	(468)
	Qtr2	7,581	8,210	(629)
	Qtr3	8,181	8,630	(449)
	Qtr4	10,853	11,550	(697)
	Year	34,337	36,580	(2,243)
Visual	Qtr1	32,847	33,190	(343)
	Qtr2	30,695	32,210	(1,515)
	Qtr3	36,412	34,630	1,782
	Qtr4	43,100	43,750	(650)
	Year	143,054	143,780	(726)
Product	Qtr1	50,979	51,490	(511)
	Qtr2	48,330	50,110	(1,780)
	Qtr3	54,050	53,030	1,020
	Qtr4	64,936	66,700	(1,764)
	Year	218,295	221,330	(3,035)

		Sales West		
		Actual	Budget	Variance
		========	========	========
Stereo	Qtr1	11,633	11,200	433
	Qtr2	11,191	11,050	141
	Qtr3	11,299	11,650	(351)
	Qtr4	14,018	14,500	(482)
	Year	48,141	48,400	(259)
Compact_Disc	Qtr1	14,321	13,500	821
	Qtr2	14,016	13,500	516
	Qtr3	14,328	14,300	28
	Qtr4	17,247	16,700	547
	Year	59,912	58,000	1,912
Audio	Qtr1	25,954	24,700	1,254
	Qtr2	25,207	24,550	657
	Qtr3	25,627	25,950	(323)
	Qtr4	31,265	31,200	65
	Year	108,053	106,400	1,653
Television	Qtr1	14,629	14,300	329
	Qtr2	14,486	13,800	686
	Qtr3	14,580	14,000	580
	Qtr4	20,814	19,400	1,414
	Year	64,509	61,500	3,009
VCR	Qtr1	13,854	13,050	804
	Qtr2	13,156	12,600	556

	Qtr3	15,030	13,750	1,280
	Qtr4	18,723	17,950	773
	Year	60,763	57,350	3,413
Camera	Qtr1	10,756	11,550	(794)
	Qtr2	10,573	11,400	(827)
	Qtr3	10,735	11,550	(815)
	Qtr4	13,906	15,000	(1,094)
	Year	45,970	49,500	(3,530)
Visual	Qtr1	39,239	38,900	339
	Qtr2	38,215	37,800	415
	Qtr3	40,345	39,300	1,045
	Qtr4	53,443	52,350	1,093
	Year	171,242	168,350	2,892
Product	Qtr1	65,193	63,600	1,593
	Qtr2	63,422	62,350	1,072
	Qtr3	65,972	65,250	722
	Qtr4	84,708	83,550	1,158
	Year	279,295	274,750	4,545

Sales South

		Actual	Budget	Variance
Television	Qtr1	8,881	9,600	(719)
	Qtr2	8,627	9,300	(673)
	Qtr3	8,674	9,300	(626)
	Qtr4	12,919	12,600	319
	Year	39,101	40,800	(1,699)
VCR	Qtr1	9,551	9,600	(49)
	Qtr2	9,049	9,300	(251)
	Qtr3	9,998	10,000	(2)
	Qtr4	12,923	13,600	(677)
	Year	41,521	42,500	(979)
Camera	Qtr1	6,641	7,200	(559)
	Qtr2	6,765	7,350	(585)
	Qtr3	6,798	7,500	(702)
	Qtr4	9,486	10,200	(714)
	Year	29,690	32,250	(2,560)
Visual	Qtr1	25,073	26,400	(1,327)
	Qtr2	24,441	25,950	(1,509)
	Qtr3	25,470	26,800	(1,330)
	Qtr4	35,328	36,400	(1,072)
	Year	110,312	115,550	(5,238)
Product	Qtr1	25,073	26,400	(1,327)
	Qtr2	24,441	25,950	(1,509)
	Qtr3	25,470	26,800	(1,330)
	Qtr4	35,328	36,400	(1,072)
	Year	110,312	115,550	(5,238)

Sales Market

		Actual	Budget	Variance

```
Stereo              Qtr1          19,472   19,550      (78)
                    Qtr2          19,124   19,200      (76)
                    Qtr3          18,972   20,000   (1,028)
                    Qtr4          24,062   24,900     (838)
                      Year        81,630   83,650   (2,020)
Compact_Disc        Qtr1          24,614   23,450    1,164
                    Qtr2          23,718   23,250      468
                    Qtr3          24,293   24,350      (57)
                    Qtr4          29,039   29,250     (211)
                      Year       101,664  100,300    1,364
  Audio             Qtr1          44,086   43,000    1,086
                    Qtr2          42,842   42,450      392
                    Qtr3          43,265   44,350   (1,085)
                    Qtr4          53,101   54,150   (1,049)
                      Year       183,294  183,950     (656)
Television          Qtr1          36,914   37,300     (386)
                    Qtr2          35,228   36,000     (772)
                    Qtr3          38,268   37,500      768
                    Qtr4          51,594   49,300    2,294
                      Year       162,004  160,100    1,904
VCR                 Qtr1          35,126   34,250      876
                    Qtr2          33,204   33,000      204
                    Qtr3          38,245   35,550    2,695
                    Qtr4          46,032   46,450     (418)
                      Year       152,607  149,250    3,357
Camera              Qtr1          25,119   26,940   (1,821)
                    Qtr2          24,919   26,960   (2,041)
                    Qtr3          25,714   27,680   (1,966)
                    Qtr4          34,245   36,750   (2,505)
                      Year       109,997  118,330   (8,333)
  Visual            Qtr1          97,159   98,490   (1,331)
                    Qtr2          93,351   95,960   (2,609)
                    Qtr3         102,227  100,730    1,497
                    Qtr4         131,871  132,500     (629)
                      Year       424,608  427,680   (3,072)
    Product         Qtr1         141,245  141,490     (245)
                    Qtr2         136,193  138,410   (2,217)
                    Qtr3         145,492  145,080      412
                    Qtr4         184,972  186,650   (1,678)
                      Year       607,902  611,630   (3,728)
```

Use the following script to create Sample 4:

```
<PAGE (Accounts, Market)
Sales
<ICHILDREN Market
{ PAGEONDIMENSION Market }
{ SUPMISSINGROWS }

      <COLUMN (Scenario)
      <CHILDREN Scenario

<ROW(Product3, Year)
<ICHILDREN Year
```

```
<IDESCENDANTS Product
    !
```

Sample 5: Reporting on Different Combinations of Data

This Essbase report script sample demonstrates how to generate a multi page report on combinations of members across dimensions.

Each page represents a different combination of Product, Market, and Budget data. The total number of pages is determined by the number of Market and Product members. This section shows a representative part of the output.

Some data values have four decimal places. The number of decimal places, by default, is output to the true number of decimal values of the data cell. Sample 6: Formatting Different Combinations of Data uses the DECIMAL format command to define a specific number of places.

The member selection commands select three Product members and fourteen Market members, producing a 42-page report. The number of report pages is determined by multiplying the number of members selected from each page dimension.

```
                    Budget Audio New_York

                    Qtr1     Qtr2     Qtr3     Qtr4     Year
                ======== ======== ======== ======== ========

Sales              6,400    6,400    6,700    8,350   27,850
Cost_of_Goods_Sold 3,012    3,012    3,146    3,973   13,143
  Margin           3,388    3,388    3,554    4,377   14,707
Marketing            525      515      475      555    2,070
Payroll            1,950    1,950    1,950    1,950    7,800
Miscellaneous          0        0        0        0        0
  Total_Expenses   2,475    2,465    2,425    2,505    9,870
    Profit           913      923    1,129    1,872    4,837
    Profit_%          14       14       17       22       17
    Margin_%          53       53       53       52       53


                    Budget Audio Boston

                    Qtr1     Qtr2     Qtr3     Qtr4     Year
                ======== ======== ======== ======== ========

Sales              6,050    5,750    5,900    7,350   25,050
Cost_of_Goods_Sold 2,829    2,695    2,762    3,413   11,699
  Margin           3,221    3,055    3,138    3,937   13,351
Marketing            410      400      400      520    1,730
Payroll            1,590    1,590    1,590    1,590    6,360
Miscellaneous          0        0        0        0        0
  Total_Expenses   2,000    1,990    1,990    2,110    8,090
    Profit         1,221    1,065    1,148    1,827    5,261
```

```
    Profit_%              20       19       19       25       21
    Margin_%              53       53       53       54       53


                                  Budget Product Market

                         Qtr1     Qtr2     Qtr3     Qtr4     Year
                     ======== ======== ======== ======== ========

Sales                141,490  138,410  145,080  186,650  611,630
Cost_of_Goods_Sold    55,860   54,579   57,379   73,276  241,093
  Margin              85,630   83,831   87,702  113,374  370,537
Marketing             10,555   10,680   10,780   13,915   45,930
Payroll               43,234   43,248   43,248   43,248  172,978
Miscellaneous              0        0        0        0        0
  Total_Expenses      53,789   53,928   54,028   57,163  218,908
    Profit            31,841   29,903   33,674   56,211  151,629
    Profit_%              23       22       23       30       25
    Margin_%              61       61       60       61       61
```

Use the following script to create Sample 5:

```
<PAGE (Scenario, Product, Market)
Budget
<ICHILDREN Product
<IDESCENDANTS Market
{ PAGEONDIMENSION Product }   // New page at each new Product
{ PAGEONDIMENSION Market }    // New page at each new Market
       <COLUMN (Year)
       <ICHILDREN Year

<ROW(Accounts)
<DESCENDANTS Accounts
    !
```

Sample 6: Formatting Different Combinations of Data

This Essbase report script sample shows how to format decimals, add underlining, and change how negative numbers display in reports.

This report uses the same layout and member selection as Sample 5, and adds more formatting in the report body. Note the use of line formatting.

```
                                 Budget Audio New_York

                         Qtr1     Qtr2     Qtr3     Qtr4     Year
                     ======== ======== ======== ======== ========

Sales                  6,400    6,400    6,700    8,350   27,850
Cost_of_Goods_Sold     3,012    3,012    3,146    3,973   13,143
                     -------- -------- -------- -------- --------
  Margin               3,388    3,388    3,554    4,377   14,707

Marketing                525      515      475      555    2,070
Payroll                1,950    1,950    1,950    1,950    7,800
```

```
Miscellaneous              0        0        0        0        0
                     -------- -------- -------- -------- --------
  Total_Expenses       2,475    2,465    2,425    2,505    9,870

    Profit               913      923    1,129    1,872    4,837
                     ======== ======== ======== ======== ========
    Profit_%           14.27    14.42    16.85    22.42    17.37
    Margin_%           52.94    52.94    53.04    52.42    52.81



                              Budget Audio Boston

                         Qtr1     Qtr2     Qtr3     Qtr4     Year
                     ======== ======== ======== ======== ========

Sales                   6,050    5,750    5,900    7,350   25,050
Cost_of_Goods_Sold      2,829    2,695    2,762    3,413   11,699
                     -------- -------- -------- -------- --------
  Margin                3,221    3,055    3,138    3,937   13,351

Marketing                 410      400      400      520    1,730
Payroll                 1,590    1,590    1,590    1,590    6,360
Miscellaneous               0        0        0        0        0
                     -------- -------- -------- -------- --------
  Total_Expenses        2,000    1,990    1,990    2,110    8,090

    Profit              1,221    1,065    1,148    1,827    5,261
                     ======== ======== ======== ======== ========
    Profit_%            20.18    18.52    19.46    24.86    21.00
    Margin_%            53.24    53.13    53.19    53.56    53.30
```

Use the following script to create Sample 6:

```
<PAGE (Scenario, Product, Market)
{ PAGEONDIMENSION Product PAGEONDIMENSION Market }
Budget
<ICHILDREN Product
<IDESCENDANTS Market
      <COLUMN (Year)
      <ICHILDREN Year
<ROW(Accounts)
{ SUPBRACKETS DECIMAL 0 }
Sales
Cost_of_Goods_Sold
{ UDATA "-" }      //line formatting command
Margin
{ SKIP }
Marketing
Payroll
Miscellaneous
{ UDATA "-" }      //line formatting command
Total_Expenses
{ SKIP }
Profit
```

```
{ UDATA DECIMAL 2 }    //line formatting command
Profit_%
Margin_%
    !
```

Format commands apply to members that follow the commands. The report begins each new page with the formats in place at the end of the previous report page. For example, if a report page ends with two decimal places, the following page begins with two decimal places. This report demonstrates the use of several important format commands:

- DECIMAL-The script for this report specifies the DECIMAL 0 format command before the Sales member.
- SUPBRACKETS-By default, negative numbers are enclosed in brackets, ( ). The SUPBRACKETS format command causes negative numbers to be output with a minus sign.
- UDATA-The UDATA command places underline characters under data columns. The character is specified within double quotes. The default is a double underline.

Sample 7: Using Aliases

This Essbase report script sample shows how to use aliases in a report, as well as how to suppress indentation, force a symmetric report, reorder columns, and restrict number of columns.

This report outputs members in the middle of a page and uses aliases or alternate names. The default row member indentation is turned off.

```
                    Stereo Market

       Qtr4                                Year
  Actual   Budget                     Actual   Budget
======== ========                   ======== ========

  24,062   24,900 Sales                81,630   83,650
  13,937   14,442 COGS                 47,654   48,517
-------- --------                   -------- --------
  10,125   10,458 Margin               33,976   35,133

   1,438    1,600 Marketing             4,933    5,465
   7,110    6,840 Payroll              28,440   27,360
    -200        0 Misc.                 -143        0
-------- --------                   -------- --------
   8,348    8,440 Total_Expenses       33,230   32,825

   1,777    2,018 Profit                  746    2,308
======== ========                   ======== ========
    7.39     8.10 Profit_%               0.91     2.76
   42.08    42.00 Margin_%              41.62    42.00


                  Compact_Disc Market

       Qtr4                                Period
  Actual   Budget                     Actual   Budget
======== ========                   ======== ========
```

```
  29,039   29,250 Sales                101,664  100,300
  10,830   11,115 COGS                  38,120   38,114
-------- -------- ---------------------------- --------
  18,209   18,135 Margin                63,544   62,186
   1,669    1,780 Marketing             6,067    5,975
   5,721    5,415 Payroll               22,200   21,660
    -226        0 Misc.                    97        0
-------- -------- ---------------------------- --------
   7,164    7,195 Total_Expenses        28,364   27,635

  11,045   10,940 Profit                35,180   34,551
======== ======== ============================ ========
   38.04    37.40 Profit_%              34.60    34.45
   62.71    62.00 Margin_%              62.50    62.00
```

Use the following script to create Sample 7:

```
<PAGE (Product, Market)
{ PAGEONDIMENSION Product }
{ PAGEONDIMENSION Market }
<IDESCENDANTS Product
{ DECIMAL 0 }
<SYM

     <COLUMN (Year, Scenario)
     Qtr4 Year
     Actual Budget
<ROW(Accounts)
{ SUPBRACKETS OUTALTNAMES NOINDENTGEN ORDER 1,2,0,3,4 }
Sales Cost_of_Goods_Sold
{ UDATA "-" }
Margin
{ SKIP }
Marketing Payroll Miscellaneous
{ UDATA "-" }
Total_Expenses
{ SKIP }
Profit
{ UDATA DECIMAL 2 }
Profit_%
Margin_%
    !
```

The SYM command forces the report to output symmetric column groups. The default is to display two columns-one for Qtr4 Actual and one for Year Budget. Because the report calls for Actual and Budget under both Qtr4 and Year, the SYM command is required. Alternatively, repeat the Actual and Budget names under Qtr4 and Year.

The OUTALTNAMES format command causes the report to use aliases or alternate names instead of member names.

The NOINDENTGEN format command causes row members to not be indented. By default, members are indented two spaces for each level.

The ORDER command moves specified output columns to new locations. The row name is considered column 0.

The FIXCOLUMNS format command restricts the number of output columns. Reports often require both ORDER and FIXCOLUMNS. You can use ORDER to remove unwanted columns, and FIXCOLUMNS to stop these columns from displaying after the report columns.

Sample 8: Creating Custom Headings and % Characters

This Essbase report script sample shows how to create a custom header for a report, and include percent sign (%) characters after each data value.

This report displays custom headings and percent sign (%) characters after each data value. This section shows a representative part of the output.

```
Prepared by: Admin              The Electronics Club              Page: 1
                                                                  09/21/01

                              Profit_% Actual Stereo

                    Jan       Feb       Mar       Apr       May       Jun
                =======   =======   =======   =======   =======   =======

New_York          1.43%   -10.00%    -3.51%    -2.22%     1.14%    -6.18%
Boston           -0.34%    -2.51%    -4.44%    -4.89%    -7.02%   -13.15%
Chicago          -0.65%    -0.72%    -2.28%    -3.53%    -6.33%   -10.79%
  East            0.18%    -4.47%    -3.39%    -3.41%    -3.60%    -9.70%
San_Francisco     1.43%    -1.87%     4.42%     2.15%    -1.26%     0.66%
Seattle           0.95%    -5.66%     1.42%    -6.82%   -11.47%   -12.34%
Denver            3.03%    -1.11%    -5.88%    -6.52%    -5.17%   -13.83%
Los_Angeles      -1.50%    -3.94%    -2.86%    -3.29%     3.12%    -2.51%
  West            0.98%    -2.95%    -0.13%    -2.81%    -2.62%    -5.61%
Dallas            0.00%     0.00%     0.00%     0.00%     0.00%     0.00%
Houston           0.00%     0.00%     0.00%     0.00%     0.00%     0.00%
Phoenix           0.00%     0.00%     0.00%     0.00%     0.00%     0.00%
  South           0.00%     0.00%     0.00%     0.00%     0.00%     0.00%
    Market        0.65%    -3.56%    -1.44%    -3.06%    -3.03%    -7.29%


Prepared by: Admin              The Electronics Club              Page: 2
                                                                  09/21/01

                            Profit_% Actual Compact_Disc

                    Jan       Feb       Mar       Apr       May       Jun
                =======   =======   =======   =======   =======   =======

New_York         32.51%    29.95%    35.30%    32.70%    30.45%    31.73%
Boston           33.42%    27.92%    33.98%    30.74%    27.45%    30.85%
Chicago          34.29%    30.48%    26.33%    28.83%    28.11%    33.76%
  East           33.35%    29.50%    32.30%    30.92%    28.77%    32.09%
San_Francisco    37.77%    35.02%    33.41%    33.23%    35.32%    37.95%
Seattle          40.41%    38.33%    38.89%    37.06%    37.01%    38.29%
Denver           31.93%    32.10%    34.82%    29.15%    32.71%    30.85%
Los_Angeles      31.65%    30.22%    30.22%    31.45%    27.06%    33.20%
  West           35.51%    33.94%    34.21%    32.77%    33.16%    35.25%
```

Dallas	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Houston	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Phoenix	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
South	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Market	34.60%	32.10%	33.41%	32.01%	31.35%	33.97%

Prepared by: Admin The Electronics Club Page: 3
09/21/01

Profit_% Actual Audio

	Jan	Feb	Mar	Apr	May	Jun
New_York	19.35%	13.64%	18.64%	16.55%	16.70%	14.65%
Boston	18.34%	14.44%	18.94%	14.94%	12.14%	12.42%
Chicago	18.50%	16.67%	13.18%	14.12%	12.70%	13.74%
East	18.76%	14.88%	17.09%	15.32%	14.05%	13.68%
San_Francisco	20.32%	17.38%	18.92%	18.03%	18.23%	20.57%
Seattle	23.36%	21.40%	23.37%	20.17%	18.82%	19.04%
Denver	18.36%	17.25%	18.88%	13.43%	15.84%	12.14%
Los_Angeles	17.15%	14.76%	15.44%	15.76%	15.10%	17.07%
West	19.75%	17.53%	19.00%	16.88%	17.01%	17.52%
Dallas	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Houston	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Phoenix	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
South	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Market	19.34%	16.45%	18.21%	16.24%	15.78%	15.96%

Prepared by: Admin The Electronics Club Page: 8
09/21/01

Profit_% Actual Product

	Jan	Feb	Mar	Apr	May	Jun
New_York	22.71%	21.43%	13.11%	10.54%	9.73%	13.16%
Boston	24.98%	23.25%	19.95%	18.00%	17.03%	18.62%
Chicago	22.01%	17.94%	18.14%	15.45%	18.70%	16.01%
East	23.19%	20.84%	16.89%	14.42%	14.94%	15.78%
San_Francisco	23.71%	20.60%	21.93%	20.45%	21.44%	19.98%
Seattle	21.06%	21.05%	21.24%	19.00%	21.72%	15.13%
Denver	21.61%	16.01%	19.79%	14.81%	20.66%	13.89%
Los_Angeles	17.54%	15.51%	17.03%	14.33%	17.59%	16.09%
West	21.02%	18.35%	19.99%	17.26%	20.30%	16.61%
Dallas	15.67%	16.50%	15.32%	13.93%	20.36%	15.49%
Houston	20.01%	20.29%	20.62%	15.87%	23.60%	12.38%
Phoenix	20.01%	16.12%	17.18%	16.50%	21.39%	15.22%
South	18.39%	17.53%	17.59%	15.36%	21.66%	14.46%
Market	21.37%	19.09%	18.46%	15.92%	18.67%	15.93%

Use the following script to create Sample 8:

```
<PAGE (Accounts, Scenario, Product)
{ PAGEONDIMENSION Product }   // New page when Product changes
Profit_%
Actual
<IDESCENDANTS Product

      <COLUMN (Year)
      Jan Feb Mar Apr May Jun

<ROW(Market)

{ STARTHEADING
TEXT   1 "Prepared by:"
      14 "*USERNAME"
       C "The Electronics Club"
      65 "*PAGESTRING"
TEXT  65 "*DATE"
SKIP
ENDHEADING }

{ Decimal 2 AFTER "%" SUPBRACKETS }   // Place % at end and
    // suppress bracket
<IDESCENDANTS Market
      !
```

Each data value in the report has a percent sign, %. This label is defined with the AFTER "%" format command. You can specify any character within quotation marks.

This report has custom headings at the top of each page. All format commands specified between the STARTHEADING and ENDHEADING format commands are displayed at the top of each report page.

TEXT format commands define text labels. The report generator provides *dynamic* text with **options*. This report uses the following options:

- *USERNAME, which outputs the user name used when connecting to Essbase Server
- *PAGESTRING, which outputs the current page number of the report
- C, which centers the report title

Sample 9: Creating Custom Page Headings

This Essbase report script sample shows how to create a custom header for a report.

This report builds on Sample 8: Creating Custom Headings and % Characters by adding custom page headings. By default, page dimension members are output at the top center of a report page. This section shows a representative part of the output.

```
Prepared by :admin              The Electronics Club              Page: 1
                              Actual Profit by Product          12/12/01

 Product: Stereo

                     Jan       Feb       Mar       Apr       May       Jun
```

New York	1.43%	-10.00%	-3.51%	-2.22%	1.14%	-6.18%
Boston	-0.34%	-2.51%	-4.44%	-4.89%	-7.02%	-13.15%
Chicago	-0.65%	-0.72%	-2.28%	-3.53%	-6.33%	-10.79%
San Francisco	1.43%	-1.87%	4.42%	2.15%	-1.26%	0.66%
Seattle	0.95%	-5.66%	1.42%	-6.82%	-11.47%	-12.34%
Denver	3.03%	-1.11%	-5.88%	-6.52%	-5.17%	-13.83%
Los Angeles	-1.50%	-3.94%	-2.86%	-3.29%	3.12%	-2.51%
Dallas	#Missing	#Missing	#Missing	#Missing	#Missing	#Missing
Houston	#Missing	#Missing	#Missing	#Missing	#Missing	#Missing
Phoenix	#Missing	#Missing	#Missing	#Missing	#Missing	#Missing
East	0.18%	-4.47%	-3.39%	-3.41%	-3.60%	-9.70%
West	0.98%	-2.95%	-0.13%	-2.81%	-2.62%	-5.61%
South	#Missing	#Missing	#Missing	#Missing	#Missing	#Missing
Market	0.65%	-3.56%	-1.44%	-3.06%	-3.03%	-7.29%

Prepared by :admin — The Electronics Club — Page: 2
Actual Profit by Product — 12/12/01

Product:Compact Disc

	Jan	Feb	Mar	Apr	May	Jun
New York	32.51%	29.95%	35.30%	32.70%	30.45%	31.73%
Boston	33.42%	27.92%	33.98%	30.74%	27.45%	30.85%
Chicago	34.29%	30.48%	26.33%	28.83%	28.11%	33.76%
San Francisco	37.77%	35.02%	33.41%	33.23%	35.32%	37.95%
Seattle	40.41%	38.33%	38.89%	37.06%	37.01%	38.29%
Denver	31.93%	32.10%	34.82%	29.15%	32.71%	30.85%
Los Angeles	31.65%	30.22%	30.22%	31.45%	27.06%	33.20%
Dallas	#Missing	#Missing	#Missing	#Missing	#Missing	#Missing
Houston	#Missing	#Missing	#Missing	#Missing	#Missing	#Missing
Phoenix	#Missing	#Missing	#Missing	#Missing	#Missing	#Missing
East	33.35%	29.50%	32.30%	30.92%	28.77%	32.09%
West	35.51%	33.94%	34.21%	32.77%	33.16%	35.25%
South	#Missing	#Missing	#Missing	#Missing	#Missing	#Missing
Market	34.60%	32.10%	33.41%	32.01%	31.35%	33.97%

Prepared by :admin — The Electronics Club — Page: 8
Actual Profit by Product — 12/12/01

Product:Product

	Jan	Feb	Mar	Apr	May	Jun
New York	22.71%	21.43%	13.11%	10.54%	9.73%	13.16%
Boston	24.98%	23.25%	19.95%	18.00%	17.03%	18.62%
Chicago	22.01%	17.94%	18.14%	15.45%	18.70%	16.01%
San Francisco	23.71%	20.60%	21.93%	20.45%	21.44%	19.98%
Seattle	21.06%	21.05%	21.24%	19.00%	21.72%	15.13%
Denver	21.61%	16.01%	19.79%	14.81%	20.66%	13.89%
Los Angeles	17.54%	15.51%	17.03%	14.33%	17.59%	16.09%
Dallas	15.67%	16.50%	15.32%	13.93%	20.36%	15.49%
Houston	20.01%	20.29%	20.62%	15.87%	23.60%	12.38%
Phoenix	20.01%	16.12%	17.18%	16.50%	21.39%	15.22%
East	23.19%	20.84%	16.89%	14.42%	14.94%	15.78%
West	21.02%	18.35%	19.99%	17.26%	20.30%	16.61%

```
 South              18.39%    17.53%    17.59%    15.36%    21.66%    14.46%
Market              21.37%    19.09%    18.46%    15.92%    18.67%    15.93%
```

Use the following script to create Sample 9:

```
<PAGE (Accounts, Scenario, Product)
<IDESCENDANTS Product
<SORTLEVEL
{ PAGEONDIMENSION Product }
{ STARTHEADING
TEXT    1 "Prepared by:"
       14 "*USERNAME"
        C "The Electronics Club"
       65 "*PAGESTRING"
SUPPAGEHEADING
UNDERLINECHAR " "
TEXT    C "Actual Profit by Product"
       65 "*DATE"
TEXT    1 "Product:"
       10 "*PAGEHDR 3"
SKIP
ENDHEADING }
Profit_%
Actual

      <COLUMN (Year)
      Jan Feb Mar Apr May Jun
<ROW(Market)

{ DECIMAL 2 AFTER "%" SUPBRACKETS UNDERSCORECHAR " " }
{ INDENTGEN 1 }
<IDESCENDANTS Market
     !
```

The SUPPAGEHEADING format command suppresses the default page headings from output.

The *PAGEHDR command customizes the location of page member labels. The Sample 9 script uses page heading number 3, Product because this is the third page dimension.

You may have also noticed that member names do not have underscores. The UNDERSCORECHAR format command blanks out underscores.

Another difference is the underlining of column headings. The UNDERLINECHAR format command causes the underlining to character to change to the character in quotes.

The report rows are also sorted according to their levels in the database outline. Sort commands, such as SORTLEVEL, do not affect individual members selected in reports. Instead, these commands work in conjunction with member selection commands.

> **Note:**
>
> You can use only one sort command in a report.

Sample 9 reverses the indentation of levels from previous reports. The INDENTGEN command indents members to the specified number of characters.

Sample 10: Using Formulas

This Essbase report script sample demonstrates how you can use column calculation formulas to manipulate the column value of a particular row or a constant.

In this report sample, each % column represents the quarterly values as a percent of Sales for the respective quarter. In addition, the Avg column represents an average value for the two quarters.

```
                                  Actual Product Market

                          Qtr1      %     Qtr2      %       Avg
                      ======== ====== ======== ====== ========

Sales                  141,245 100.00  136,193 100.00  138,719
Cost_of_Goods_Sold      58,104  41.14   56,281  41.32   57,193
  Margin                83,141  58.86   79,912  58.68   81,527
Marketing               11,211   7.94   11,302   8.30   11,257
Payroll                 43,817  31.02   43,827  32.18   43,822
Miscellaneous              302   0.21    1,859   1.36    1,081
  Total_Expenses        55,330  39.17   56,988  41.84   56,159
    Profit              27,811  19.69   22,924  16.83   25,368
    Profit_%                20   0.01       17   0.01       18
    Margin_%                59   0.04       59   0.04       59
```

Use the following script to create Sample 10:

```
// This report performs column calculations based on values in a
// report row.

<PAGE (Scenario, Product, Market)
Actual

      <COLUMN (Year)
      Qtr1 Qtr2

{ DECIMAL 2 3 4 }
{ NAMEWIDTH 22 WIDTH 7 3 4 }
{ ORDER 0 1 3 2 4 5 }

<ROW (Accounts)
{ SAVEROW } Sales
    !

{ CALCULATE COLUMN "%" = 1 % "Sales" 1 }
{ CALCULATE COLUMN "% " = 2 % "Sales" 2 }
{ CALCULATE COLUMN "Avg" = 1 + 2 / 2. }

<DESCENDANTS Accounts
    !
```

> **Note:**
>
> You can include comments in the report by preceding the text with //. The Report Extractor ignores everything that follows the double slash. You can use comments to explain report processing.

The SAVEROW command reserves space for a row member that the CALCULATE COLUMN command calculates. In this case, the calculation affects SALES. The ! is required after the member name.

The CALCULATE COLUMN command allows column numbers, row names, or constants in formulas. You can read the first calculation this way: "% equals column 1 as a percent of Sales in column 1."

Each calculated column label must be unique. Note how the second calculated column label has a blank space after the % sign.

To specify a constant, define a number followed by a period. You can use a constant in either a column or row calculation. The last column calculation takes the sum of columns 1 and 2 and divides by the value 2. This formula is interpreted as (1+2)/2, *not* 1 + (2/2.).

As noted in Sample 7: Using Aliases, the ORDER command arranges columns in the specified order. By default, calculated columns are added to the end of existing columns retrieved from the database. In this example, columns 0-2 are automatically retrieved, based on selected members. Columns 3-5 are the calculated columns. The ORDER command applies to both retrieved and calculated columns.

Sample 11: Placing Two-Page Layouts on the Same Page

This Essbase report script sample demonstrates how to build two different layouts on the same page.

```
                              Year Profit_% Actual

                                  East      West     South    Market
                             ========= ========= ========= =========

Stereo                          -0.52%     1.91%     0.00%     0.91%
Compact_Disc                    32.60%    36.00%     0.00%    34.60%
  Audio                         17.86%    20.81%     0.00%    19.60%
Television                      20.40%    16.57%    13.50%    17.21%
VCR                             30.81%    32.43%    33.70%    32.24%
Camera                          16.66%    21.66%    17.83%    19.07%
  Visual                        23.16%    23.56%    22.27%    23.09%
    Product                     21.34%    22.50%    22.27%    22.04%

                                      Sales Actual Product

                                   Qtr1     Qtr2     Qtr3     Qtr4     Year
                             ========= ======== ======== ======== ========

New_York                      $18,631  $17,681  $19,923  $24,403  $80,638
Boston                        $15,812  $15,050  $16,716  $19,159  $66,737
Chicago                       $16,536  $15,599  $17,411  $21,374  $70,920
```

```
  East                $50,979  $48,330  $54,050  $64,936 $218,295
San_Francisco         $19,761  $19,019  $20,722  $24,807  $84,309
Seattle               $13,766  $13,546  $14,204  $19,034  $60,550
Denver                $13,800  $13,588  $13,838  $18,232  $59,458
Los_Angeles           $17,866  $17,269  $17,208  $22,635  $74,978
  West                $65,193  $63,422  $65,972  $84,708 $279,295
Dallas                $ 9,226  $ 9,175  $ 9,481  $12,700  $40,582
Houston               $ 7,690  $ 7,363  $ 7,646  $10,785  $33,484
Phoenix               $ 8,157  $ 7,903  $ 8,343  $11,843  $36,246
  South               $25,073  $24,441  $25,470  $35,328 $110,312
    Market           $141,245 $136,193 $145,492 $184,972 $607,902
```

Use the following script to create Sample 11:

```
<PAGE (Year, Accounts, Scenario)

      <COLUMN (Market)
      <ICHILDREN Market

<ROW(Product)
<IDESCENDANTS Product

Actual
{ DECIMAL 2 WIDTH 10 SUPBRACKETS AFTER "%" }
Profit_%
    !

<PAGE (Accounts, Scenario, Product)
Actual
Sales
Product

      <COLUMN(Year)
      <ICHILDREN Year

<ROW(Market)
{ DECIMAL 0 After " " BEFORE "$" }
<IDESCENDANTS Market
    !
```

In a single report, you can select multiple dimension layouts and members. To define a multiple layout report, define reports as you normally do. Separate the commands with exclamation marks as shown above. Whenever the column, row, or page dimensions change between ! output commands, new headings are automatically generated to match the new layout.

The BEFORE format command places a character in front of data values. The AFTER format command turns off the percent signs from the first report layout.

Sample 12: Formatting for Data Export

This report script sample creates a report with a member name in each column. This format is required when you export Essbase data to another product, such as a SQL database, with a flat file.

```
New York        Stereo          Sales              1000.0    950.0
New York        Stereo          Cost of Goods Sold  580.0    551.0
New York        Stereo          Margin              420.0    399.0
New York        Stereo          Marketing            80.0     80.0
New York        Stereo          Payroll             340.0    340.0
New York        Stereo          Miscellaneous         0.0      0.0
New York        Stereo          Total Expenses      420.0    420.0
New York        Stereo          Profit                0.0    -21.0
New York        Stereo          Profit %              0.0     -2.2
New York        Stereo          Margin %             42.0     42.0
New York        Compact Disc    Sales              1200.0   1150.0
New York        Compact Disc    Cost of Goods Sold  456.0    437.0
New York        Compact Disc    Margin              744.0    713.0
New York        Compact Disc    Marketing            95.0     95.0
New York        Compact Disc    Payroll             310.0    310.0
New York        Compact Disc    Miscellaneous         0.0      0.0
New York        Compact Disc    Total Expenses      405.0    405.0
New York        Compact Disc    Profit              339.0    308.0
New York        Compact Disc    Profit %             28.3     26.8
New York        Compact Disc    Margin %             62.0     62.0
New York        Audio           Sales              2200.0   2100.0
New York        Audio           Cost of Goods Sold 1036.0    988.0
New York        Audio           Margin             1164.0   1112.0
New York        Audio           Marketing           175.0    175.0
New York        Audio           Payroll             650.0    650.0
New York        Audio           Miscellaneous         0.0      0.0
New York        Audio           Total Expenses      825.0    825.0
New York        Audio           Profit              339.0    287.0
New York        Audio           Profit %             15.4     13.7
New York        Audio           Margin %             52.9     53.0
New York        Television      Sales              1800.0   1600.0
```

Use the following script to create Sample 12:

```
<PAGE(Scenario)

<COLUMN(Year)

<ROW (Market, Product, Accounts)
<CHILDREN East
<DESCENDANTS Product

{ DECIMAL 1
WIDTH 9
SUPBRACKETS
SUPCOMMA
MISSINGTEXT " "
UNDERSCORECHAR " "
```

```
SUPHEADING
NOINDENTGEN
SUPFEED
ROWREPEAT

Budget
      Jan Feb

<DESCENDANTS Accounts
    !
```

The ROWREPEAT command produces rows of data that have the member names repeated for each row dimension.

The SUPFEED command suppresses page feeds. A page feed automatically occurs when the report output reaches the default page length of 66 rows, unless you enter the PAGELENGTH command to change this setting. When a large flat file is created, you can use this command to prevent page breaks (blank rows) from being displayed in the report every time output reaches a logical page length.

Sample 13: Creating Asymmetric Columns

This Essbase report script sample makes asymmetric columns, and uses the RENAME command to avoid use of an alias table.

Typically, a report contains symmetric columns. That is, when multiple dimensions are displayed across the page as column groups, each level of nested columns has the same number of members nested below. Because Actual has only one nested column, Jan, and Budget has three nested columns, this report is considered asymmetric.

Some rows in the report use names other than the member names from the cube. In addition to allowing aliases, as in Sample 7: Using Aliases, you can rename a row name in the report.

```
                                  Product Market

                        Actual    Budget    Budget    Budget
                           Jan       Jan       Feb       Mar
                      ======== ======== ======== ========

Revenue                 49,896   49,950   45,770   45,770
Cost of Goods           20,827   19,755   18,058   18,047
  Gross Margin          29,069   30,196   27,712   27,723

Marketing                3,560    3,515    3,525    3,515
Payroll                 14,599   14,402   14,416   14,416
Miscellaneous              249        0        0        0
  Total Expenses        18,408   17,917   17,941   17,931

    Profit              10,661   12,279    9,771    9,792
```

Use the following script to create Sample 13:

```
<PAGE (Product, Market)

      <COLUMN (Scenario, Year)
```

```
      Actual   Budget Budget Budget
         Jan      Jan    Feb    Mar

<ROW (Accounts)

{ RENAME "Revenue" } Sales
{ RENAME "Cost of Goods" } Cost_of_Goods_Sold
{ RENAME "Gross Margin" } Margin

{ SKIP UNDERSCORECHAR " " }
<ICHILDREN Total_Expenses

{ SKIP }
Profit
!
```

To create an asymmetric report, you must specify the member name of each column. Because the report output has two column groupings, Scenario and Year, you must specify a member from each dimension for each column. If you do not specify each column member, the resulting report format is symmetric.

The RENAME command redefines a member name when the report is output. Use the RENAME command when you do not want to use an alias table.

Sample 14: Calculating Columns

The following Essbase report script samples demonstrate use cases for CALCULATE COLUMN commands.

CALCULATE COLUMN supports standard mathematical operations.

- Sample 14-A: Basic Calculated Columns
- Sample 14-B: Asymmetric Columns

Sample 14-A: Basic Calculated Columns

This Essbase report script sample generates needed report columns using mathematical calculations.

```
                                        East

          Actual                                                Budget
Var
   Jan    Feb    Mar   Qtr1                      Jan    Feb    Mar     Q1
Q1

====== ====== ====== ======                  ====== ====== ====== ======
=======
 1,295  1,132    553  2,980  Tele~ Profit    1,240    950    950  3,140
(160)
    25     27     14     66        Profit_%     26     22     22     70
(4)
    56     62     59    177        Margin_%     60     60     60    180
(3)
 1,417  1,120    898  3,435  VCR   Profit    1,466  1,161  1,161  3,788
```

```
(353)
    33     30     24     87        Profit_%     35     31     31     98
(10)
    61     61     62    183        Margin_%     63     63     63    189
(6)
   400    272    256    928  Cam~  Profit       528    360    360  1,247
(319)
    15     11     10     36        Profit_%     19     13     13     45
(10)
    70     70     70    211        Margin_%     71     71     71    213
(2)
 3,112  2,524  1,707  7,343  Visu~ Profit     3,234  2,471  2,471  8,175
(832)
    25     24     17     66        Profit_%     27     23     23     74
(7)
    61     63     63    187        Margin_%     64     64     64    191
(4)
```

Use the following script to create Sample 14-A:

```
<PAGE(Market)
East
      <COLUMN (Scenario, Year)
      Actual  Budget
      Jan Feb Mar
{ CALCULATE COLUMN "Qtr1"  = 2 : 4
  CALCULATE COLUMN "Q1" = 5 : 7
  CALCULATE COLUMN "Var~Q1" = 8 - 9

  ORDER 2,3,4,8,0,1,5,6,7,9
  WIDTH 7 WIDTH 10 0 1
}
<ROW (Product, Accounts)
<ICHILDREN Visual

<CHILDREN Accounts
    !
```

Sample 14-B: Asymmetric Columns

This Essbase report script sample generates two regular columns defined in asymmetric mode.

For an explanation of the use of asymmetric columns, see Sample 13: Creating Asymmetric Columns.

```
                                East

          Budget                              Actual    Actual
             Jan                                 Jan   % Sales
         ========                            ========  ========

           1,200 Television  Payroll          1,236       25%
             440             Marketing          365        9%
           1,240             Profit           1,295       26%
```

```
  4,800             Sales          5,244      100%

  1,030 VCR         Payroll        1,044       25%
    150             Marketing        156        4%
  1,466             Profit         1,417       35%
  4,200             Sales          4,311      100%

  1,195 Camera      Payroll        1,167       42%
    300             Marketing        288       11%
    528             Profit           400       19%
  2,850             Sales          2,656      100%

  3,425 Visual      Payroll        3,447       29%
    890             Marketing        809        8%
  3,234             Profit         3,112       27%
 11,850             Sales         12,211      100%
```

Use the following script to create Sample 14-B:

```
<PAGE(Market)
East

     <COLUMN(Scenario, Year)
     Budget  Actual
     Jan     Jan

{ ORDER 2,0,1,3,4 WIDTH 12 0 1 NOINDENTGEN AFTER "%" 4
  SKIPONDIMENSION Product LMARGIN 10 }

<ROW(Product, Accounts)

{ CALCULATE ROW "Sales" OFF }
{ CALCULATE COLUMN "Actual~% Sales" = 2 % "Sales" 2 }

<ICHILDREN Visual
{ SAVEROW } Sales
     Payroll
     Marketing
     Profit
<DUPLICATE Sales
    !
```

Sample 15: Calculating Rows

The following Essbase report script samples demonstrate use cases for CALCULATE ROW commands.

- Sample 15-A: Basic Calculated Row
- Sample 15-B: Calculated Rows and Missing Relationships
- Sample 15-C: Rows of Averages

Sample 15-A: Basic Calculated Row

This Essbase report script sample demonstrates the basic form of the CALCULATE ROW command.

```
                        Audio Actual Sales
                          Jan      Feb      Mar
                     ======== ======== ========

Boston                  1,985    1,801    1,954
New_York                2,310    2,082    2,259
Chicago                 2,043    1,884    1,814

Total Sales             6,338    5,767    6,027
Avg Sales               2,113    1,922    2,009
```

Use the following script to create Sample 15-A:

```
     Audio Actual Sales
     Jan Feb Mar

{ CALCULATE ROW "Total Sales" }    //create new calculated row
Boston
New_York
Chicago

{ SKIP
  CALCULATE ROW "Avg Sales" = "Total Sales" /3
  PRINTROW "Total Sales"
  PRINTROW "Avg Sales" }
    !
```

Sample 15-B: Calculated Rows and Missing Relationships

This Essbase report script summarizes information. When relationships that you need for reporting are not present in the outline, often the best solution is to use calculated rows (or columns).

This sample report is a simple summary of information in a North/South grouping, which is not part of the cube outline.

```
           Budget Payroll

                        Jan      Feb      Mar
                       ====     ====     ====
Northern Cities
================
New_York              1,940    1,930    1,930
Boston                1,610    1,610    1,610
Chicago               1,630    1,630    1,630
San_Francisco         1,815    1,815    1,815
Seattle               1,415    1,409    1,409
```

```
Southern Cities
===============
Denver              1,499    1,499    1,499
Los_Angeles         1,757    1,787    1,787
Dallas              1,002    1,002    1,002
Phoenix               900      900      900
Houston               834      834      834

Total Northern      8,410    8,394    8,394
Total Southern      5,992    6,022    6,022
```

Use the following script to create Sample 15-B:

```
// Declare Calculated Rows to Sum Southern and Northern Cities
{ CALCULATE ROW "Total Southern" OFF

// initially, set operation to OFF
  CALCULATE ROW "Total Northern" OFF  }

<PAGE(Product,Scenario,Accounts)
{ RENAME "" } Product             // all products, so blank out
                                  // the Product Label
Budget
Payroll
     <COLUMN(Year)
     Jan  Feb  Mar

<ROW(Market)                      // Northern Cities

{ SETROWOP "Total Northern" +     // Accumulate for Northern

SKIP 3
IMMHEADING                                          // Put out heading
now so text
                                  // will go after it
Text 0 "Northern Cities" UCHARACTERS
}

New_York Boston  Chicago San_Francisco Seattle

//Southern Cities

{ SETROWOP "Total Southern" +   } // Accumulate for Southern
{ SETROWOP "Total Northern" OFF } // Stop Accumulation for Northern

{ SKIP Text 0 "Southern Cities" UCHARACTERS }

Denver  Los_Angeles Dallas  Phoenix Houston

{ SKIP
PRINTROW "Total Northern"         // output calculated rows
PRINTROW "Total Southern"
}
    !
```

Sample 15-C: Rows of Averages

This Essbase report script sample restricts columns during calculation to average rows that contain partly numbers and percentages.

The report must calculate the total regional average percentages using previously calculated rows that contain the total sales for the region. Also, the report must compute (for averaging) a count of regions. The number of regions is set as a constant in the cube outline. If this number changes, the report definition must be modified. If a count of regions is not computed, a hard-to-notice error can result.

```
 Actual Total Sales for the 3 Video Products in Qtr1:  36,914   35,126
25,119
 Budget Total Sales for the 3 Video Products in Qtr1:  37,300   34,250
26,940
 ================================================  ======   ======   ======
                 Qtr1

                      Television              VCR             Camera
                     Profit Profit_%       Profit Profit_%  Profit   Profit_%
                     ======  =======       ====== ========  ======  =========
 New_York   Budget    1,020   20.40%        1,382   31.41%     540     16.68%
            Actual      847   17.66%        1,243   29.62%     352     11.79%
 Boston     Budget    1,020   24.88%        1,344   35.37%     277     11.79%
            Actual    1,405   33.48%        1,002   27.49%     207      9.28%
 Chicago    Budget    1,100   25.58%        1,062   31.24%     430     16.54%
            Actual      728   16.51%        1,190   30.68%     369     14.72%
 San_Fran~  Budget      930   21.63%          718   21.12%   1,270      31.75
            Actual      674   15.54%        1,197   31.12%   1,000      27.4%
 Seattle    Budget      390   15.60%          973   32.98%     376     16.00%
            Actual      340   12.20%          977   31.56%     312     13.79%
 Denver     Budget      690   22.26%          929   30.97%     462     18.86%
            Actual      334   11.94%          914   30.48%     361     15.92%
Los_Ange~   Budget      810   18.41%        1,101   29.76%     506     18.40%
            Actual      429    9.11%        1,127   28.81%     377     14.62%
 Dallas     Budget      780   21.08%        1,341   36.24%     333     13.88%
            Actual      163    4.69%        1,055   30.28%     243     10.71%
 Houston    Budget      690   24.64%        1,128   36.39%     432     18.00%
            Actual      256   10.44%        1,064   34.98%     241     10.98%
 Phoenix    Budget      630   20.32%          894   31.93%     498     20.75%
            Actual      251    8.49%          940   31.07%     261     11.99%

                                    Total Regions Averages

 Avg      Budget   806    21.61%    1,087    31.74%      512     19.02%
 Avg      Actual   543    14.70%    1,071    30.49%      372     14.82%
```

Use the following script to create Sample 15-C:

```
{ // Declare some of the Calculated Rows to be used
  CALCULATE ROW "Avg~Budget" OFF
  CALCULATE ROW "Avg~Actual" OFF
  CALCULATE ROW "Tot Sales~Budget" OFF
  CALCULATE ROW "Tot Sales~Actual" OFF
```

```
}
// We need the values of Market->Visual->Qtr1->Sales->Actual and
// Market ->Visual->Qtr1->Sales ->Budget to compute some
// percentages at the bottom, so get them now

Market
<CHILDREN Visual Qtr1 Sales
{ SAVEROW "Actual Sales" } Actual  // stores into first 3
                           // data columns
{ SAVEROW "Budget Sales" }
Budget                                                  // of these rows, which
                           // are cols 1-3
                           // change to columns 2-4 when we
                           // specify 2 row dimensions in
                           // next section
// Since this is an example, not a formal report, we'll
// type out the values for Actual Sales and Budget Sales here so
// you can check the numbers:

{ SKIP 2
TEXT 0 "Actual Total Sales for the 3 Video Products in Qtr1:" 55 "*CALC"
"Actual Sales"
TEXT 0 "Budget Total Sales for the 3 Video Products in Qtr1:" 55 "*CALC"
"Budget Sales"
UCHARACTERS
SKIP 5 }
    !                      // Now we can do the main report
{ AFTER "%" 3,5,7  DECI 2 3,5,7 ZEROTEXT "--" MISSING "--"
  WIDTH 10 0 1  }

<PAGE(Year)
Qtr1
                <COLUMN(Product,Accounts)
                <CHILDREN Visual
                Profit     // split these 2 accounts onto
                           // 2 lines to prevent default
                Profit_%   // to asymmetric mode
                           // because both column
                           // dimensions have the same # of
                           // members selected. Could have
                           // used <SYM instead.
<ROW(Market,Scenario)
<ONSAMELEVELAS New_York
            { SETROWOP "Avg~Actual" OFF
              SETROWOP "Avg~Budget" +

              CALCULATE ROW "Count" = "Count" + 1.   }

             Budget

             { SETROWOP "Avg~Budget" OFF
               SETROWOP "Avg~Actual" +          }

            >{ SKIP }

             Actual
```

```
{ UCOLUMNS SKIP 2 }
{
  // at this point, Avg~Budget and Avg~Actual ARE NOT YET
  // AVERAGES--they are the SUM of the Profit rows of each type.
  // Before converting them to averages, the report computes
  // Profit as a % of total sales for each type. Since we only
  // have 1 value for "Budget Sales" and "Actual Sales",
  // for each of the three visual products in those
  // rows, the report restricts the reference to those rows to
  // columns 2-4 while computing the percentage columns 3, 5, and 7,
  // based on profits in columns 2, 4 and 6
  // calculate the percentages for Budget
CALCULATE ROW "Avg~Budget" 3 = "Avg~Budget" 2 % "Budget Sales" 2
CALCULATE ROW "Avg~Budget" 5 = "Avg~Budget" 4 % "Budget Sales" 3
CALCULATE ROW "Avg~Budget" 7 = "Avg~Budget" 6 % "Budget Sales" 4

  // now calculate the averages
CALCULATE ROW "Avg~Budget" 2  = "Avg~Budget" / "Count"
CALCULATE ROW "Avg~Budget" 4  = "Avg~Budget" / "Count"
CALCULATE ROW "Avg~Budget" 6  = "Avg~Budget" / "Count"

  // calculate the percentages for Actual
CALCULATE ROW "Avg~Actual" 3 = "Avg~Actual" 2 % "Actual Sales" 2
CALCULATE ROW "Avg~Actual" 5 = "Avg~Actual" 4 % "Actual Sales" 3
CALCULATE ROW "Avg~Actual" 7 = "Avg~Actual" 6 % "Actual Sales" 4

  // now calculate the averages
CALCULATE ROW "Avg~Actual" 2  = "Avg~Actual" / "Count"
CALCULATE ROW "Avg~Actual" 4  = "Avg~Actual" / "Count"
CALCULATE ROW "Avg~Actual" 6  = "Avg~Actual" / "Count"

TEXT C "Total Regions Averages"
PRINTROW "Avg~Budget"
PRINTROW "Avg~Actual" }
    !
```

Sample 16: Sorting by Top or Bottom Data Values

The following Essbase report script samples demonstrate the use of TOP and BOTTOM conditional retrieval commands.

- Sample 16-A: Bottom Data Values
- Sample 16-B: Top Data Values

Sample 16-A: Bottom Data Values

The following Essbase report script sample demonstrates the basic use of the BOTTOM command.

This sample report is based on the Sample Basic database.

```
                                        Measures

                                  Actual            Budget
```

```
                                    Jan      Dec      Jan      Dec
                                ======== ======== ======== ========
East            200                 158      233      280      340
                300                 184      277      240      210
                Diet                181      213      200      240
West            100                 378      223      830      530
                300                 755      971      830      950
                400                 454      434      470      370
South           200                 480      496      520      390
                Diet                355      404      490      430
                300                 188      213      270      240
Central         300                 790      824      930      810
                100                 724      792      900      890
                400                 691      785      660      650
  Market        200               2,141    2,302    2,710    2,810
                300               1,917    2,285    2,270    2,210
                400               1,611    1,720    1,730    1,600
```

Use the following script to create Sample 16-A:

```
<Sym
<Column (Scenario, Year)
Actual Budget
Jan Dec
<Row (Market, Product)
<ICHILDREN Market
<ICHILDREN Product
<Bottom (3, @DataColumn(3))
    !
```

The BOTTOM command specifies that only the three lowest data values are returned for each row grouping, based on the target data values specified in column three (Budget, Jan). Notice that no row dimension is selected here, so the report output defaults to the innermost row.

Sample 16-B: Top Data Values

The following Essbase report script sample demonstrates the basic use of the TOP command.

This report is based on the Sample Basic database.

```
                                          Measures

                                    Actual            Budget
                                    Jan      Dec      Jan      Dec
                                ======== ======== ======== ========

New York        100-10              262      271      260      250
                200-40              175      312      200      320
                400-10              101       89      120       90
                400-20               94      133      110      150
                300-10              111      309      100      210
                400-30               54       52       70       60
                300-20             (113)    (189)     (70)    (150)
                200-10             (172)    (224)    (170)    (210)
Massachusetts   100-10              367      390      360      360
```

```
                200-40              100       87      110       80
                400-10               29       29       40       40
                400-30               29       25       40       30
                300-10               17        7       30       10
                200-10              (23)     (20)     (10)     (10)
...
  East          100-10              837      867      860      830
                200-40              267      383      310      400
                400-10              215      201      280      230
                400-30              157      167      210      200
                300-10              177      368      190      270
                400-20               94      133      110      150
                200-20               80       79      100      110
                100-20               67      122       70      110
                100-30               20       37       30       50
                300-30               34       12       30       20
```

Use the following report script to create Sample 16-B:

```
<Sym
//Suppress shared members from displaying
<Supshare
     <Column (Scenario, Year)
     Actual Budget
     Jan Dec
<Row (Market, Product)
<Desc Market
//Use bottom level of products
<DimBottom Product
<Top (10, @DataColumn(3))
!
```

The TOP command specifies that only the ten highest data values are returned for each row grouping, based on the target data values specified in column three (Budget, Jan).

Sample 17: Restricting Rows

The following Essbase report script sample demonstrates how to use the RESTRICT conditional retrieval command in a report script.

```
                                        Measures

                                   Actual            Budget
                                Jan      Dec      Jan      Dec
                           ======== ======== ======== ========

East        200                 158      233      280      340
            300                 184      277      240      210
            Diet                181      213      200      240
South       300                 188      213      270      240
            400            #Missing #Missing #Missing #Missing
```

Use the following script to create Sample 17:

```
<Sym
<Column (Scenario, Year)
Actual Budget
Jan Dec
<Row (Market, Product)
<Ichildren Market
<Ichildren Product
<Restrict (@DATACOLUMN(3) < $300.00 )
    !
```

The RESTRICT command specifies that only data values that are less than $300.00 are returned for each row grouping, based on the target data values specified in column three (Budget, Jan). Notice that no row dimension is selected here, so the report output defaults to the innermost row.

Sample 18: Ordering Data Values

The following Essbase report script sample demonstrates how to use the ORDERBY conditional retrieval command in a report script.

```
                                        Sales Scenario
                                    Jan      Feb      Mar      Apr
                                ======== ======== ======== ========

New York        100-20          #Missing #Missing #Missing #Missing
                100-30          #Missing #Missing #Missing #Missing
                200-20          #Missing #Missing #Missing #Missing
                200-30          #Missing #Missing #Missing #Missing
                300-30          #Missing #Missing #Missing #Missing
                  Diet          #Missing #Missing #Missing #Missing
                200-10                61       61       63       66
                400-30               134      189      198      198
                300-20               180      180      182      189
                400-20               219      243      213      223
                400-10               234      232      234      245
                300-10               483      495      513      638
                200-40               490      580      523      564
                  200                551      641      586      630
                  400                587      664      645      666
                  300                663      675      695      827
                100-10               678      645      675      712
                  100                678      645      675      712
                    Product        2,479    2,625    2,601    2,835
```

Use the following script to create Sample 18:

```
<Page ("Measures")
<Column ("Scenario", "Year")
<Row ("Market", "Product")
"Sales"
"Scenario"
"Jan" "Feb" "Mar" "Apr"
```

```
"New York"
"Product" "100" "100-10" "100-20" "100-30" "200" "200-10"
"200-20" "200-30" "200-40" "300" "300-10" "300-20" "300-30" "400"
"400-10" "400-20" "400-30" "Diet" "100-20" "200-20" "300-30"

<ORDERBY ("Product", @DATACOLUMN(1) ASC, @DATACOLUMN(2) DESC, @DATACOLUMN(3)
ASC @DATACOLUMN (4) DESC)
     !
```

The ORDERBY command is based only on data in the data columns. If the SUPPRESSMISSING command is not used in the report, `#MISSING` is considered to be the lowest data value. ORDERBY compares data values in the following order:

- Two values in the same column (for example, in COL1, the value associated with 200-10 is compared with the 400-30 data value, as shown in the example below).
- Data values between two data columns (for example, the data value in COL1 is compared with the data value in COL2, as shown in the example next).

If two data values are the same, the sort proceeds to the next column to determine the order.

In the following subset of Sample 18, for Product 200-10, the data values in COL1 and COL2 are both 61; the data in COL1 should be in ascending order, the data in COL2 should be in descending order. The two values are compared, and as they are the same, COL2 and COL3 are compared. Therefore, even though COL2 is supposed to be in descending order, the comparison for the row 400-30 was determined by the values in COL3, which is in ascending order.

```
                  COL 1    COL 2     COL 3    COL 4
                  =====    =====

200-10              61       61        63       66
400-30             134      189       198      198
300-20             180      180       182      189
```

Sample 19: Narrowing Member Selection Criteria

The following Essbase report script sample demonstrates how to use the LINK command to narrow the members returned in a selection in a report script.

```
          Market Measures Scenario

                        Qtr1     Qtr2
                    ======== ========

100-10                 5,096    5,892
100-20                 1,359    1,534
100-30                   593      446
200-10                 1,697    1,734
200-20                 2,963    3,079
200-30                 1,153    1,231
200-40                   908      986
300-10                 2,544    3,231
300-20                   690      815
300-30                 2,695    2,723
400-10                 2,838    2,998
```

```
        400-20              2,283    2,522
        400-30               (116)      (84)
        100-20              1,359    1,534
        200-20              2,963    3,079
        300-30              2,695    2,723
            Product        24,703   27,107
```

Use the following script to create Sample 19:

```
<Page (Market)
<Column (Year)
Qtr1 Qtr2
<Row (Product)
<Link (<UDA (product, naturally-flavored) OR <LEV (product, 0))
    !
```

The LINK command uses the AND, OR, and NOT Boolean operators to refine the search. In the preceding example, the product with the "naturally-flavored" user-defined attribute (UDA), as well as all Level 0 products, are returned in the search.

Be careful how you group operators in the LINK expression. Essbase evaluates operators from left to right. Use parentheses to group the expressions. For example, A OR B AND C is the same as ((A OR B) AND C). In the first expression, Essbase evaluates the expression from left to right, evaluating A OR B before evaluating AND C. In the second expression, Essbase evaluates the subexpression in parentheses (A OR B) before the whole expression, producing the same result. However, if you use (A OR (B AND C)), Essbase evaluates the subexpression in parentheses (B AND C) before the whole expression, producing a different result.

Sample 20: Using Attributes in Member Selection

The following Essbase report script sample demonstrates how to use members of attribute dimensions to view data on base dimensions that are associated with those attribute dimensions.

```
Profit Actual Caffeinated_True Qtr1 East

          Ounces_32   Ounces_20   Ounces_16   Ounces_12      Ounces
         =========== =========== =========== =========== ===========

Bottle     #Missing         488         240         (586)        142
Can        #Missing    #Missing    #Missing        2,776      2,776
Pkg Type   #Missing         488         240        2,190      2,918
```

Use the following script to create Sample 20:

```
{WIDTH 12}
<Page (Measures, Scenario, Caffeinated, Year, Market)
Profit
Actual
Caffeinated_True
Qtr1
East
<Column (Ounces)
<ICHILDREN Ounces
```

```
<Row ("Pkg Type")
<ICHILDREN "Pkg Type"
    !
```

The report output reflects data on Quarter 1 profits for caffeinated products by all their available sizes and package types. The data values indicate `#MISSING` when there is no data for a specific size in a specific package type. Because attributes are defined only on sparse dimensions, there are several `#MISSING` values in the sample report. You can represent missing values by suppressing the row or substituting a replacement text string, such as N/A. See Sample 2: Handling Missing Values for an example of substituting page breaks and labels for missing values.

Sample 21: Using the WITHATTR Command in Member Selection

The following Essbase report script sample demonstrates how to use the WITHATTR command to view information based on the attributes of the members of a base dimension.

```
                    Profit Actual Qtr1 East

                      Bottle         Can    Pkg Type
                ============ ============ ============
100-30                  74    #Missing          74
200-30              #Missing    #Missing    #Missing
200-40                 908    #Missing         908
400-10                 645    #Missing         645
400-20                 290    #Missing         290
400-30                 545    #Missing         545
```

Use the following script to create Sample 21:

```
{WIDTH 12}
<Page (Measures, Scenario, Year, Market)
Profit
Actual
Qtr1
East
<Column ("Pkg Type")
<ICHILDREN "Pkg Type"
<Row (Product)
<WITHATTR(Caffeinated,"<>",True)
<IDESCENDANTS Product
!
```

The report output reflects data on Quarter 1 profits for caffeinated products by their package types. The data values indicate `#MISSING` when there is no data for a specific package type. Because attributes are defined only on sparse dimensions, there are several `#MISSING` values in the sample report.

Report Writer Command List

The following commands are available in Report Writer for Essbase.

Consult the Contents pane for a categorical list of Report Writer commands.

Table 4-2 Report Writer List

Alphabetical List of Report Writer Commands		
&	LINK	SAVEROW
!	LMARGIN	SCALE
ACCOFF	MASK	SETCENTER
ACCON	MATCH	SETROWOP
AFTER	MATCHEX	SINGLECOLUMN
ALLINSAMEDIM	MEANINGLESSTEXT	SKIP
ALLSIBLINGS	MISSINGTEXT	SKIPONDIMENSION
ANCESTORS	NAMESCOL	SORTALTNAMES
ASYM	NAMESON	SORTASC
ATTRIBUTE	NAMEWIDTH	SORTDESC
ATTRIBUTEVA	NEWPAGE	SORTGEN
BEFORE	NOINDENTGEN	SORTLEVEL
BLOCKHEADERS	NOPAGEONDIMENSION	SORTMBRNAMES
BOTTOM	NOROWREPEAT	SORTNONE
BRACKETS	NOSKIPONDIMENSION	SPARSE
CALCULATE COLUMN	NOUNAMEONDIM	STARTHEADING
CALCULATE ROW	OFFCOLCALCS	SUDA
CHILDREN	OFFROWCALCS	SUPALL
CLEARALLROWCALC	OFSAMEGEN	SUPBRACKETS
CLEARROWCALC	ONCOLCALCS	SUPCOLHEADING
COLHEADING	ONROWCALCS	SUPCOMMAS
COLUMN	ONSAMELEVELAS	SUPCURHEADING
COMMAS	ORDER	SUPEMPTYROWS
CURHEADING	ORDERBY	SUPEUROPEAN
CURRENCY	OUTALT	SUPFEED
DATEFORMAT	OUTALTMBR	SUPFORMATS
DECIMAL	OUTALTNAMES	SUPHEADING
DESCENDANTS	OUTALTSELECT	SUPMASK
DIMBOTTOM	OUTFORMATTEDMISSING	SUPMISSINGROWS
DIMEND	OUTFORMATTEDVALUES	SUPNAMES
DIMTOP	OUTMBRALT	SUPOUTPUT
DUPLICATE	OUTMBRNAMES	SUPPAGEHEADING
ENDHEADING	OUTMEANINGLESS	SUPSHARE
EUROPEAN	OUTPUT	SUPSHAREOFF
FEEDON	OUTPUTMEMBERKEY	SUPZEROROWS
FIXCOLUMNS	PAGE	SYM
FORMATCOLUMNS	PAGEHEADING	TABDELIMIT
GEN	PAGELENGTH	TEXT
HEADING	PAGEONDIMENSION	TODATE
IANCESTORS	PARENT	TOP
ICHILDREN	PERSPECTIVE	UCHARACTERS
IDESCENDANTS	PRINTROW	UCOLUMNS
IMMHEADING	PYRAMIDHEADERS	UDA
INCEMPTYROWS	QUOTEMBRNAMES	UDATA

Table 4-2 (Cont.) Report Writer List

Alphabetical List of Report Writer Commands		
INCFORMATS	REMOVECOLCALCS	UNAME
INCMASK	RENAME	UNAMEONDIMENSION
INCMISSINGROWS	REPALIAS	UNDERLINECHAR
INCZEROROWS	REPALIASMBR	UNDERSCORECHAR
INDENT	REPMBR	WIDTH
INDENTGEN	REPMBRALIAS	WITHATTR
IPARENT	REPQUALMBR	WITHATTREX
LATEST	RESTRICT	ZEROTEXT
LEAVES	ROWREPEAT	
LEV	SAVEANDOUTPUT	

&

Prefaces a substitution variable in the report script.

Syntax

```
& variableName
```

Parameters

variableName
The name of the substitution variable set on the database.

Notes

Any string that begins with a leading & is treated as a substitution variable; Essbase replaces these variables with their associated values prior to the parsing of the report script. Member names beginning with & are considered substitution variables by Report Writer.

Example

```
<ICHILDREN &CurQtr
```

becomes

```
<ICHILDREN Qtr1
```

if the substitution variable CurQtr has the value name "Qtr1".

!

Tells Essbase to output the instructions in the report script to the current line.

Syntax

```
!
```

Notes

Each report script requires at least one ! command to produce output. Use multiple instances of the ! command to separate multiple report specifications in a report script.

Following !, the new report specification retains data format output commands from previous specifications unless you enter commands in the new report that turn them off. The new report specification does not retain data extraction command defaults.

If you omit ! at the end of the report script and run the report, the report processor does not report output or display an error message.

ACCOFF

Turns off member accumulation (this is the default).

Syntax

```
<ACCOFF
```

Notes

<ACCOFF selects members of the same dimension only if the select commands of the dimension follow one another in the report script. If a select command containing another dimension interrupts, the report script ignores the previous select commands. <ACCOFF can be used in multiple report scripts where the script redefines only a few select statements from the previous script.

Example

The following report script is designed for the Sample Basic cube, available in the gallery. <ACCOFF excludes the two members that precede East (100-10 and 200-10), because East is from a different dimension. The report script includes 300-10 and 400-10, which follow East.

```
<PAGE (Measures)
Sales
<ASYM
<COLUMN (Scenario, Year)
Actual Budget
Jan Feb
<ROW (Product, Market)
<ACCOFF
"100-10"
"200-10"
"East"
"300-10"
"400-10"
!
```

This example produces the following report:

```
          Sales
       Actual   Budget
          Jan      Feb
       =======  =======
```

```
300-10  East       999      770
400-10  East       562      580
```

Related Topics

- ACCON

ACCON

Turns on member accumulation.

> **Note:**
>
> By default, member accumulation is off.

Syntax

```
<ACCON
```

Notes

This command selects all members, regardless of the order of the select statements. Use this command to mix members from different dimensions in select statements.

Example

The following report script is designed for the Sample Basic cube, available in the gallery. The <ACCON command causes inclusion of all members, regardless of dimensionality.

```
<PAGE (Measures)
Sales
<ASYM
<COLUMN (Scenario, Year)
Actual Budget
Jan Feb
<ROW (Product, Market)
<ACCON
"100-10"
"200-10"
"East"
"300-10"
"400-10"
!
```

This example produces the following report:

```
                  Sales
               Actual   Budget
                  Jan      Feb
               =======  =======
100-10  East     1,812    1,640
200-10  East       647      630
```

```
300-10  East       999      770
400-10  East       562      580
```

Related Topics

- ACCOFF

AFTER

Displays a character following the data columns in the report.

This command displays only the first character of a string, even if more are specified. If you do not specify any columns in *columnList*, *char* is displayed after all data columns in the report.

Syntax

```
{ AFTER char [columnList] }
```

Parameters

char
A single-byte character enclosed in quotation marks.

columnList
Optional list of one or more column numbers, separated by spaces. If included, AFTER affects only these columns. If you do not specify *columnList*, all data columns are affected.

Notes

- Double-byte characters are not supported.
- If a value is equal to #MISSING, the string inserted after it does not print, even if you replace #MISSING with some other value (such as 0).

Example

The following report script is designed for the Demo Basic cube, available in the gallery. The `{AFTER "%"}` command displays the percent sign after each data value.

```
<PAGE (Market, Accounts, Scenario)
Chicago Sales Actual

<COLUMN (Year)
<ICHILDREN  Year

<ROW (Product)

{ AFTER "%" }
<ICHILDREN Audio
     !
```

This example produces the following report:

```
                    Chicago Sales Actual

                Qtr1    Qtr2    Qtr3    Qtr4    Year
```

```
                =======  ======  ======  ======  =======

Stereo           2,591%  2,476%  2,567%  3,035%  10,669%
Compact_Disc     3,150%  3,021%  3,032%  3,974%  13,177%
  Audio          5,741%  5,497%  5,599%  7,009%  23,846%
```

Related Topics

- BEFORE

ALLINSAMEDIM

Selects all the members from the same dimension as the specified dimension member for the report.

Syntax

```
<ALLINSAMEDIM mbrName
```

Parameters

mbrName
Single member representing a dimension. All members from this dimension are selected.

Example

The following report script is designed for the Demo Basic cube, available in the gallery. `<ALLINSAMEDIM Audio` selects all the members from the dimension.

```
<PAGE (Market, Accounts, Scenario)
Chicago Sales Actual

 <COLUMN (Year)
 <ICHILDREN Year

<ROW  (Product)
<ALLINSAMEDIM Audio
 !
```

This example produces the following report:

```
                     Chicago Sales Actual

                Qtr1    Qtr2    Qtr3    Qtr4     Year
              =======  ======  ======  ======  =======
Stereo          2,591   2,476   2,567   3,035   10,669
Compact_Disc    3,150   3,021   3,032   3,974   13,177
  Audio         5,741   5,497   5,599   7,009   23,846
Television      4,410   4,001   4,934   6,261   19,606
VCR             3,879   3,579   4,276   4,877   16,611
Camera          2,506   2,522   2,602   3,227   10,857
  Visual       10,795  10,102  11,812  14,365   47,074
    Product    16,536  15,599  17,411  21,374   70,920
```

Related Topics

- ALLSIBLINGS
- DESCENDANTS

ALLSIBLINGS

Adds all the siblings of the specified member to the report.

Syntax

```
<ALLSIBLINGS mbrName
```

Parameters

mbrName
Name of member whose siblings you want to add.

Example

The following report script is designed for the Demo Basic cube, available in the gallery. `<ALLSIBLINGS Stereo` selects the siblings of the member Stereo.

```
<PAGE (Market, Accounts, Scenario)
Chicago Sales Actual

 <COLUMN (Year)
 <ICHILDREN Year

<ROW  Product)
<ALLSIBLINGS Stereo
 !
```

This example produces the following report:

```
                  Chicago Sales Actual

                  Qtr1    Qtr2    Qtr3    Qtr4     Year
               ======= ======= ======= ======= =======
Stereo           2,591   2,476   2,567   3,035  10,669
Compact_Disc     3,150   3,021   3,032   3,974  13,177
```

Related Topics

- ANCESTORS
- DESCENDANTS

ANCESTORS

Adds all the ancestors of the specified member to the report.

Syntax

```
<ANCESTORS mbrName
```

Parameters

mbrName
Name of member whose ancestors you want to add.

Example

A

The following report script is designed for the Demo Basic cube, available in the gallery. `<ANCESTORS Stereo` adds Audio and Product to the report (as Audio is the parent to Stereo, and Product is the parent to Audio).

```
<PAGE (Market, Accounts, Scenario)
Chicago Sales Actual

 <COLUMN (Year)
 <ICHILDREN Year

<ROW (Product)
<ANCESTORS Stereo
 !
```

This script produces the following report:

```
              Chicago Sales Actual

              Qtr1    Qtr2    Qtr3    Qtr4    Year
            =======  ======  ======  ======  ======
Audio         5,741   5,497   5,599   7,009  23,846
  Product    16,536  15,599  17,411  21,374  70,920
```

Related Topics

- IANCESTORS

ASYM

Causes a report to be printed in an asymmetric format.

This command reverses a previously specified SYM command in an asymmetric report.

If **<**SYM is used, all report headers appear in a symmetric format, even if there are equal numbers of members in each row of the column header. **<**ASYM turns off symmetric mode.

> **Note:**
>
> Essbase prints an asymmetric report (with BLOCKHEADERS) only when all column dimensions include the same number of selected members and all members from each column dimension are on the same line. Otherwise, a symmetric report (with PYRAMIDHEADERS) is produced.

Syntax

```
<ASYM
```

Notes

If the number of members you select from one column dimension differs from the number of members you select from another column dimension, the resulting report is *always* symmetric.

Example

The following report script example is based on Sample Basic.

```
<PAGE (Measures, Market)
Texas Sales
<SYM
     <COLUMN (Scenario, Year)
     Actual Budget
     Jan Feb
<ROW (Product)
<IDESCENDANTS "100"
!
<ASYM
!
```

Which produces the following reports:

```
                    Sales Texas
                       Actual            Budget
                        Jan      Feb      Jan      Feb
                   ======== ======== ======== ========

100-10                  452      465      560      580
100-20                  190      190      230      230
100-30            #Missing #Missing #Missing #Missing
  100                   642      655      790      810

                    Sales Texas
                   Actual   Budget
                        Jan      Feb
                   ======== ========

100-10                  452      580
100-20                  190      230
```

```
100-30          #Missing #Missing
  100                642      810
```

Related Topics

- SYM

ATTRIBUTE

Returns all base-dimension members associated with a specified attribute.

Syntax

```
<ATTRIBUTE attMbrName
```

Parameters

attrMbrName
The name of a member of an attribute dimension.

Notes

- When *attrMbrName* is a non level-0 member of an attribute dimension, Essbase returns all base-dimension members associated with its children. For example, in the Sample Basic cube, `<ATTRIBUTE Large` returns all base-dimension members associated with any children of the attribute parent Large.
- With Boolean attributes, if you specify a Boolean dimension name (for example, Caffeinated), Essbase returns all base-dimension members associated with either Caffeinated member (for example, True or False). To return only one or the other, specify that member name (for example, `<ATTRIBUTE Caffeinated_True)`.
- The outline may contain duplicate Boolean, date, and numeric attribute-dimension member names; for example, 12 can be the attribute value for the size (in ounces) of a product as well as the value for the number of packing units for a product. To distinguish duplicate member names with the <ATTRIBUTE command, specify the full name of the attribute (for example, `<ATTRIBUTE 12_Ounces`).

Example

```
<ATTRIBUTE Red
```

returns all base-dimension members associated with the member Red of the specified attribute dimension.

The following report script is designed for the Sample Basic cube, available in the gallery. The script returns on rows only the names of the drinks that are associated with the member Ounces_12 on the corresponding attribute dimension.

```
<PAGE (Market, Measures, Scenario)
       South Sales Actual

<COLUMN (Year)
<ICHILDREN Year

{OUTALTNAMES}
<ATTRIBUTE Ounces_12
```

```
!
```

The report script produces the following report:

```
                                South Sales Actual

                    Qtr1     Qtr2     Qtr3     Qtr4     Year
                ======== ======== ======== ======== ========

Cola               2,296    2,509    2,975    2,824   10,604
Diet Cola          1,436    1,569    1,482    1,189    5,676
Old Fashioned      1,686    1,625    1,773    1,840    6,924
Sasparilla         1,862    1,938    1,830    1,921    7,551
Diet Cream         1,241    1,255    1,378    1,593    5,467
```

Related Topics

- WITHATTR

ATTRIBUTEVA

Returns all base-dimension members associated with a specified varying attribute member. This command allows querying of the base member list given the attribute member-dimension and the perspective setting.

> **Note:**
>
> For use only in applications enabled with varying attributes.

Syntax

```
<ATTRIBUTEVA (attMbrName, options, startTuple[, endTuple])
```

Parameters

attrMbrName
The name of a member of a varying attribute dimension.

options
ANY

startTuple[, endTuple]
`(m1, m2, ..., mN)`
Level-0 members from one or more independent dimensions for `attrMbrName` may be part of the input tuple.
Members from all independent dimensions should be listed. If a member is not listed, the member of the same dimension from the current query or calculation context is used.

Notes

- When *attrMbrName* is a non level-0 member of an attribute dimension, Essbase returns all base-dimension members associated with its children.
- With Boolean attributes, if you specify a Boolean dimension name (for example, Caffeinated), Essbase returns all base-dimension members associated with either Caffeinated member (for example, True or False). To return only one or the other, specify that member name (for example, `<ATTRIBUTEVA Caffeinated_True)`.
- Your outline may contain duplicate Boolean, date, and numeric attribute-dimension member names; for example, 12 can be the attribute value for the size (in ounces) of a product as well as the value for the number of packing units for a product. To distinguish duplicate member names with the <ATTRIBUTEVA command, specify the full name of the attribute (for example, `<ATTRIBUTE 12_Ounces`).

Example

```
<AttributeVa([Ounces_12], ANY, (Jan), (Feb))


<AttributeVa([Ounces], ANY, (Jan))
```

Related Topics

- WITHATTR
- PERSPECTIVE

BEFORE

Displays a character string before data columns in the report.

Quotes without a character string clear the text displayed before data columns. For example, { BEFORE "" } turns off previously issued BEFORE commands.

Syntax

```
{ BEFORE "char" [ columnList ] }
```

Parameters

char
A single-byte character enclosed in quotation marks.

columnList
Optional. List of the column numbers, separated by spaces, that you want *char* to precede. Without *columnList*, *char* is displayed before all columns in the report.

Notes

Double-byte characters are not supported.

Example

The following report script is designed for the Demo Basic cube, available in the gallery. `{ BEFORE "$" }` is used to display the dollar sign before all the data values.

```
<PAGE Market, Accounts, Scenario)
Chicago Sales Actual
 <COLUMN  Year)
 <ICHILDREN Year
<ROW (Product)
{ BEFORE "$" }
<ICHILDREN Audio
 !
```

This example produces the following report:

```
                    Chicago Sales Actual
                  Qtr1    Qtr2    Qtr3    Qtr4     Year
                =======  ======  ======  ======  =======
Stereo           $2,591  $2,476  $2,567  $3,035  $10,669
Compact_Disc     $3,150  $3,021  $3,032  $3,974  $13,177
  Audio          $5,741  $5,497  $5,599  $7,009  $23,846
```

Related Topics

- AFTER

BLOCKHEADERS

Displays all members that apply to a column as the column heading, in the style used by asymmetric reports.

> **Note:**
>
> This is the only format that can be used with asymmetric reports. Pyramid headers are the default for symmetric reports.

Syntax

```
{ BLOCKHEADERS }
```

Notes

- BLOCKHEADERS is a setting command.
- BLOCKHEADERS can be useful when columns are reordered and previously symmetric upper-tier column headers no longer align properly.
- BLOCKHEADERS ensures right-justified alignment of all columns.

Example

The following example is based on Sample Basic.

```
<PAGE Measures)
Sales
{WIDTH 7}
{BLOCKHEADERS}
<SYM
     <COLUMN (Scenario, Year, Market)
     Actual Budget
     Jan Feb
     East West
<ROW (Market)
<IDESCENDANTS "400"
     !
```

This example produces the following report:

```
                                                                                Sales

                 Actual Actual Actual Actual Actual Actual Actual Actual
Budget Budget Budget Budget Budget Budget Budget Budget
                    Jan    Jan    Jan    Jan    Feb    Feb    Feb    Feb
Jan    Jan    Jan    Jan    Feb    Feb    Feb    Feb
                 400-10 400-20 400-30    400 400-10 400-20 400-30    400
400-10 400-20 400-30    400 400-10 400-20 400-30    400
                 ====== ====== ====== ====== ====== ====== ====== ======
====== ====== ====== ====== ====== ====== ====== ======

East               562    219    432  1,213    560    243    469  1,272
580    230    440  1,250    580    260    490  1,330
West             1,115  1,032    625  2,772  1,122  1,065    618  2,805
740    690    410  1,840    740    700    400  1,840
```

Related Topics

- PYRAMIDHEADERS

BOTTOM

Returns rows with the lowest values of a specified data column.

Syntax

```
<BOTTOM ([rowgroupDimension,] rows, column)
```

Parameters

rowgroupDimension
Optional row grouping dimension that determines the rows to sort as a set. Default value: inner row.

rows
Number of rows to be returned; must be greater than 0.

column
@DATACOLUMN (*colNumber*) | @DATACOLUMN (*colNumber*)
where *colNumber* is the target column number; must be between 1 and the maximum number of columns in the report.

Notes

This command sorts the result set by the value of the specified data column in descending order.

Rows containing #MISSING values in the sort column are discarded from the result set before BOTTOM is applied.

You can use TOP and BOTTOM, ORDERBY and RESTRICT in the same report script, but you can use each command only once per report. If you repeat the same command in a second report in the same report script, the second command overwrites the first. Place global script formatting commands before a PAGE, COLUMN command or associated member (for example, <ICHILDREN or <IDESCENDANTS). Avoid using row formatting commands with BOTTOM.

If any of the ORDERBY, TOP, BOTTOM, or RESTRICT commands exist together in a report script, *rowgroupDimension* should be the same. Otherwise, an error is issued.

The ORDERBY, TOP, and BOTTOM commands sort a report output by its data values. The RESTRICT command restricts the number of valid rows for the report output. Their order of execution is:

1. Any sorting command that sorts on member names (for example <SORTDESC or <SORTASC)
2. RESTRICT
3. TOP and BOTTOM
4. ORDERBY

This order of execution applies regardless of the order in which the commands appear in the report script.

You can use configurable settings to specify the size of the internal buffers used for storing and sorting the extracted data. The following settings affect the way the RESTRICT, TOP, and BOTTOM commands work:

- Retrieval Buffer Size (a database setting)
- Retrieval Sort Buffer Size (a database setting)

Example

Example 1:

The following report script is designed for the Demo Basic cube, available in the gallery.

```
<Page (Market, Accounts, Scenario)
 Chicago Sales Actual
<Bottom (5, @DataColumn(4))
<Column(Year)
<Ichildren Year
<Row(Product)
```

```
<Idescendants Product
!
<Bottom (3, @DataColumn(1))
{Indentgen 3}
Boston Sales Actual
<Ichildren Year
<Idescendants Product
!
```

The report script produces the following report:

```
                          Chicago Sales Actual

                    Qtr1     Qtr2     Qtr3     Qtr4     Year
                ======== ======== ======== ======== ========

Television         4,410    4,001    4,934    6,261   19,606
VCR                3,879    3,579    4,276    4,877   16,611
Compact_Disc       3,150    3,021    3,032    3,974   13,177
Camera             2,506    2,522    2,602    3,227   10,857
Stereo             2,591    2,476    2,567    3,035   10,669

                          Boston Sales Actual

                    Qtr1     Qtr2     Qtr3     Qtr4     Year
                ======== ======== ======== ======== ========

      Compact_Disc  3,290    3,034    3,132    3,571   13,027
      Stereo        2,450    2,341    2,377    2,917   10,085
      Camera        2,230    2,255    2,266    3,162    9,913
```

Example 2:

The following report script example is designed for the Sample Basic cube, available in the gallery. It uses the ORDERBY, TOP, BOTTOM, and RESTRICT functions:

```
<TOP ("Year", 10, @DataColumn(2))
{Width 15}
{Decimal 2}
{OutAltNames}
<BOTTOM ("Year", 5, @DataColumn(2))
<OutMBrAlt
<Column(Scenario)
 {SupBrackets}
 Actual Budget  "Variance %"
<RESTRICT (@DataColumn(2) > 3000 and @DataColumn(1)
 < 3500)
<Row(Year, Product)
<Idescendants Product
<Children Year
<OrderBy ( "Year",@DataColumn(1), @DataColumn(2) Desc)
!
```

The report script produces the following report:

```
                                                  Measures Market

                                                    Actual         Budget     Variance
%
                                          ============== ==============
==============

Qtr1            300-10 Dark Cream         2,544.00       3,010.00
-15.48
                300-30 Diet Cream         2,695.00       3,070.00
-12.21
                                          2,695.00       3,070.00
-12.21
Qtr4            300-30 Diet Cream         2,820.00       3,080.00
-8.44
                                          2,820.00       3,080.00
-8.44
                200-20 Diet Root          2,834.00       3,790.00
-25.22
                                          2,834.00       3,790.00
-25.22
Qtr1            200-20 Diet Root          2,963.00       3,600.00
-17.69
                                          2,963.00       3,600.00
-17.69
Qtr2            200-20 Diet Root          3,079.00       3,640.00
-15.41
                                          3,079.00       3,640.00
-15.41
Qtr3            200-20 Diet Root          3,149.00       3,700.00
-14.89
                                          3,149.00       3,700.00
-14.89
Qtr2            300-10 Dark Cream         3,231.00       3,570.00
-9.50
Qtr3            300-10 Dark Cream         3,355.00       3,730.00          -10.05
```

Related Topics

- RESTRICT
- TOP
- ORDERBY

BRACKETS

Displays parentheses around negative numbers instead of negative signs.

> **Note:**
>
> Brackets are the default for negative numbers.

Syntax

```
{ BRACKETS }
```

Notes

The BRACKETS command need only be used to cancel the effect of a previously issued SUPBRACKETS command. Brackets are used by this command to mean parentheses.

Example

{BRACKETS} displays -43.243 as (43.243) in the report.

Related Topics

- SUPBRACKETS

CALCULATE COLUMN

Creates a new report column, performs on-the-fly calculations, and displays the calculation results in the newly-created column.

Each new calculated column is appended to the right of the existing columns in the order in which it is created, and is given the next available column number.

See ORDER for more information on column numbering and ordering.

Syntax

```
{ CALCULATE COLUMN "newColumn" = expression }
```

Parameters

"newColumn"
New column name enclosed by quotation marks.

expression
A column calculation expression.
If an operation or equation is not specified, the default is + (add).
The following mathematical operators are supported in column calculations:
`+` Addition operator.
`-` Subtraction operator.
`*` Multiplication operator.
`%X%Y` Evaluates X as a percentage of Y.
`/` Division operator.
`:X:Y` Performs a summation of data values from X to Y (inclusive). Must be the first operator if used with multiple operators.

Notes

- No more than 50 column calculations can be defined at any one time in the report.
- All arguments in expressions must be valid data column numbers, as determined by the original order of the columns, or constants. Floating point constants can be entered directly into an expression (for example `0.05`). Integer values are designated by a decimal point following the last digit (for example, `10.`); this distinguishes integer constants from column references. For example, the following command sums columns 1 through 12 and divides the total by 12:

  ```
  {CALCULATE COLUMN "New_Col" = 1+3 / 6+8 % 15 * 100.-"Tot_Row" 3+12}
  ```

- Precede and follow all operators in an expression with a single space.
- Nested (parenthetical) expressions are not supported.
- Expressions are *always* evaluated left to right, regardless of operator precedence. For example, the expression 1 + 4 + 5 / 100.0 sums columns 1, 4, and 5, and divides the total by 100. To sum columns 1 and 4 and add the quotient of column 5 divided by 100, use the following expression: 5 / 100.0 + 1 + 4
- You can use the ORDER command to arrange columns in an easy-to-read fashion.
- If you use the same name for more than one column, Essbase creates only the last column specified in the CALCULATE COLUMN command. Use a leading space with the second (or two leading spaces with the third, and so on) name to create a "unique" column name.
- The SUM RANGE operator (:) can only be used as the first operation in an expression. For example, = 1 : 3 or = 1 : 3 + 7 * 9 are valid expressions, but =7* 9 : 12 is invalid because the SUM RANGE operator is not the first operator. The SUM RANGE operator (:) may not be used with a calculated row as one of the arguments. For example, = 1 : "Total_Sales" 3 is invalid.
- A reference to a calculated row in a column calculation must include a column restriction to specify the single column whose value is to be used in the calculation.
- A column calculation cannot reference a calculated row name that has not yet been declared. Use { CALCULATE ROW "calcrowname" OFF } prior to the CALCULATE COLUMN referencing it, to declare a calculated row's name when the actual definition of the row calculation's operation cannot be done until later in the report.
- If a column calculation is attached to a member that is nested within a repeating group, it is redefined over and over. This is allowed, but very inefficient. When possible, define column calculations prior to areas of the report where members repeat. If the same name occurs later in the report with a new and different definition, the prior definition is lost.

Example

Example 1 (CALCULATE COLUMN)

The following example is based on Sample Basic.

```
<PAGE (Measures, Market)
Sales
<SYM
     <COLUMN (Scenario, Year)
     Actual Budget
     Jan Feb
{WIDTH 8 0}
```

```
{WIDTH 7}
{WIDTH 11 5 6}
{CALCULATE COLUMN "Actual YTD" = 1 + 2}
{CALCULATE COLUMN "Budget YTD" = 3 + 4}
{ORDER 0 1 2 5 3 4 6}
<ROW (Market)
<CHILD "400"
     !
```

This example produces the following report:

```
                                Sales Actual

             Jan          Feb      Jan                Feb
        400-10 400-20     400-20 400-30 400-10     400-30 Actual Budget
        ====== ====== ========== ====== ====== ========== ====== ======

Market   2,839  2,562      2,596  1,233  2,879      1,261  5,401  4,112

                               Sales Budget

             Jan          Feb      Jan                Feb
        400-10 400-20     400-20 400-30 400-10     400-30 Actual Budget
        ====== ====== ========== ====== ====== ========== ====== ======

Market   2,320  2,040      2,050    990  2,350      1,030  4,360  3,340
```

Example 2 (CALCULATE COLUMN)

The following samples demonstrate additional column calculations.

To calculate a new column named "1st Qtr" equal to the sum of the first 3 columns:

```
{CALCULATE COLUMN "1st Qtr" = 1 : 3}
```

To calculate a new column that is equal to column 12 taken as a percentage of the value in column 12 of a calculated row called "Total Sales":

```
{CALCULATE COLUMN "% of Total" = 12 % "Total Sales" 12}
```

To calculate a new column equal to column 1 multiplied by the constant 35:

```
{CALCULATE COLUMN "Extended_Price" = 1 * 35.}
```

The following example calculates a new column, adds column 1 to column 3, divides the result by column 6, adds column 8, takes that result as a percentage of column 15, multiplies that result by the constant number 100, subtracts the value from the 3rd column of the calculated row "Tot_Row", and adds the result to column 12.

```
{CALCULATE COLUMN "New_Col" = 1+3 / 6+8 % 15 * 100.-"Tot_Row" 3+12}
```

Related Topics

- OFFCOLCALCS
- ONCOLCALCS
- REMOVECOLCALCS
- SETROWOP

CALCULATE ROW

Creates a named row and associates it with a row name or label. This is similar to declaring a variable. This command can also specify an operation (+, _, *, /, or OFF) as an equation consisting of constants, other calculated rows, and operators.

Equations are evaluated at the time of declaration. If an operator is specified, subsequent output rows have the operator applied to them with the result stored in the calculated row.

This is useful for aggregating a series of rows to obtain a subtotal or total. The operator can be reset at any point with SETROWOP. If neither an equation nor an operator are specified in the CALCULATE ROW command, the + operator is assumed.

SETROWOP defines a calculation operator to be applied to all subsequent output data rows. Use PRINTROW to display the calculation results in the newly created row.

Syntax

1:

```
{ CALCULATE ROW "newRow" [ columnNo ] = expression }
```

2:

```
{ CALCULATE ROW "newRow" [ operator ]}
```

Parameters

"newRow"
Name of a new row, enclosed by quotation marks, that was declared with SAVEROW or SAVEANDOUTPUT.

columnNo
Optional. Column numbers to which Essbase applies the expression.

expression
Row calculation expression. Member names are not supported.

operator
One of the following mathematical operators:

- `+` Addition.
- `-` Subtraction.
- `*` Multiplication.
- `%X%Y` X as a percentage of Y.

- `/` Division.
- `OFF` Turns off the row operator.

If omitted, the default is + (add).

Notes

- Row name can have multiple levels, separated by the tilde (~} character, for use when there is more than one row name column in the report. For example, the calculated row name "Actual~Sales", if output (using PRINTROW) in a report with at least two row name columns, results in Sales in the right-most row name column, and Actual in the row name column to its left. If a multiple level row-name is used in a report with only one row-name column, only the rightmost part of the name appears in the report.
- CALCULATE ROW is limited to returning no more than 500 rows.
- The practical length of the row name is limited by the width of the column(s) in which it is output. Characters to the right that would overwrite information in the next column are truncated.
- To store a multiple-value array into a calculated row prior to the point where you have defined your columns (with your column dimension member selections), you can use NS to pre-allocate a larger number of columns with which to work with. If you supply fewer values than there are data columns, the operation using the array stops after the last array value and there are no changes to the remaining columns based on that operator. If the extra columns are currently missing, they stay missing; if they are non-missing, they retain their current values.
- Expressions are always computed from left to right. Parentheses may not be used for grouping.
- Expressions cannot contain member names.
- Commands that designate columns must use valid data column numbers, as determined by the *original* order of the columns.
- All operators in an expression must be preceded and followed with a single space.
- Integer and floating point constants are supported in expressions as single entries or members of an array.
- Row calculations are created with three commands: CALCULATE ROW, SETROWOP, and PRINTROW.

Example

The following samples demonstrate row calculations that you can perform. Note that "Total Sales" in the examples represent a calculated row, not a member name.

To compute "Avg Sales" by dividing by the constant 2:

```
{ CALCULATE ROW "Avg Sales" = "Total Sales" / 2 }
```

To multiply the first six data columns of the calculated row "Total Sales" by the six factors and store the result in the calculated row "Factored Sales":

```
{ CALCULATE ROW "Factored Sales" = "Total Sales" * [1.0 1.3 1.9 2.3 3.0
3.7 ] }
```

To store five factors in the first five columns of "Factors", for use in later calculated row computations and/or PRINTROW output:

```
{ CALCULATE ROW "Factors" = [ 1.3 2.6 3.1 2.3 5 ] }
```

To store the value from the seventh column of "Total Sales", multiplied by 1000, in every column of the calculated row "Ending Sales":

```
{ CALCULATE ROW "Ending Sales" = "Total Sales" 7 * 1000 }
```

To set the value in column 7 of "Ending Sales" to the corresponding value from the row "Total Sales":

```
{ CALCULATE ROW "Ending Sales"7 = "Total Sales" }
```

`"Total"` refers to itself in this calculation and divides itself by 1000:

```
{ CALCULATE ROW "Total" = "Total" / 1000. }
```

To show a variety of operations used in one expression, use an expression like this:

```
{ CALCULATE ROW "xyz" = [ 11 12.3 -6 ] / 7 + "abc"2 % 4300. + 10 }
```

This expression divides the three values in the array by the constant 7 (if there are currently more than three data columns, the extra columns remain #Missing), adds the value from column 2 of "abc" to every column, and computes the resulting row's values as percentages of the constant 4300, and adds the constant 10 to all columns, storing the final result in "xyz". Note that if there are more than three data columns, the result in the extra columns is 10, since prior to the last operation, they were #Missing.

Related Topics

- CLEARROWCALC
- CLEARALLROWCALC
- DUPLICATE
- OFFCOLCALCS
- OFFROWCALCS
- ONCOLCALCS
- ONROWCALCS
- OUTPUT
- PRINTROW
- REMOVECOLCALCS
- RENAME
- SAVEROW
- SETROWOP
- SUPOUTPUT

CHILDREN

Selects all members in the level immediately below the specified member.

This command does not select the specified member.

Syntax

```
<CHILDREN mbrName
```

Parameters

mbrName
Dimension or member name of the parent

Notes

- If member names contain spaces (for example, Cost of Goods Sold) or consist of numbers (for example, 100-10), they must be enclosed in double quotes.
- CHILDREN lists members in their outline order. The parent, specified by *mbrName*, is not included.
- The ICHILDREN command includes the specified member.

Example

```
<CHILDREN Year
```

Selects members Qtr1, Qtr2, Qtr3, and Qtr4, in that order (see the Notes for this command).

```
<CHILD Qtr1
```

Selects members Jan, Feb, and Mar, in that order.

Related Topics

- DESCENDANTS
- ICHILDREN
- IDESCENDANTS

CLEARALLROWCALC

Resets the value of all calculated rows to `#MISSING`.

Syntax

```
{ CLEARALLROWCALC }
```

Related Topics

- CALCULATE ROW
- CLEARROWCALC
- OFFCOLCALCS
- OFFROWCALCS
- ONCOLCALCS
- ONROWCALCS
- PRINTROW
- REMOVECOLCALCS
- SETROWOP
- SUPOUTPUT

CLEARROWCALC

Resets the value of the row calculation *name* to `#MISSING`.

Syntax

```
{ CLEARROWCALC name }
```

Parameters

name
Name of a calculated row from a CALCULATE ROW command.

Related Topics

- CALCULATE ROW
- CLEARALLROWCALC
- OFFCOLCALCS
- OFFROWCALCS
- ONCOLCALCS
- ONROWCALCS
- PRINTROW
- REMOVECOLCALCS
- RENAME
- SAVEANDOUTPUT
- SAVEROW
- SETROWOP
- SUPOUTPUT

COLHEADING

Turns on automatic display of the column header, and sets it to be output prior to display of the next non-suppressed output data row.

Syntax

```
{ COLHEADING }
```

Notes

- The purpose of delaying the header output is to ensure that when no data follows a heading (due to suppression with a SUPMISSING or at the end of a report, for instance, a meaningless header is not generated.
- IMMHEADING produces a new page and column heading immediately, without waiting for the next non-suppressed output line.
- COLHEADING can be specified between the STARTHEADING and ENDHEADING commands to position the heading relative to other outputs defined in the custom heading.
- When COLHEADING is used, the column members are displayed at the time the heading is generated, rather than immediately. Thus, if this command was issued at the start of the report script, it would still generate column headings only as part of the regular heading, and not as the first item on the page.
- COLHEADING also displays column headings after they have been suppressed with either a SUPCOLHEADING, SUPHEADING, or SUPALL command.
- By default, page and column headers (together called the HEADING) are turned on. This means they are displayed prior to the first actual output row in a report, and are reset to display again whenever:
  1. A new page is generated.
  2. Any member in the page or column dimensions changes.
- A specific COLHEADING, PAGEHEADING, or IMMHEADING dictates a new heading. Once they are reset to "display", they are output just prior to the new non-suppressed output row.

Example

The following report script is designed for the Demo Basic cube, available in the gallery. The COLHEADING command displays the column heading members for a second time after displaying a blank line with the SKIP command.

```
<PAGE (Market, Accounts, Scenario)
Chicago Sales Actual
      <COLUMN (Year)
      <ICHILDREN Year
<ROW (Product)
<ICHILDREN Audio
{ SKIP COLHEADING }
<ICHILDREN Visual
     !
```

This example produces the following report:

```
                    Chicago Sales Actual
                 Qtr1    Qtr2    Qtr3    Qtr4     Year
               ======= ======= ======= ======= =======
Stereo           2,591   2,476   2,567   3,035  10,669
Compact_Disc     3,150   3,021   3,032   3,974  13,177
  Audio          5,741   5,497   5,599   7,009  23,846

                 Qtr1    Qtr2    Qtr3    Qtr4     Year
               ======= ======= ======= ======= =======
Television       4,410   4,001   4,934   6,261  19,606
VCR              3,879   3,579   4,276   4,877  16,611
Camera           2,506   2,522   2,602   3,227  10,857
  Visual        10,795  10,102  11,812  14,365  47,074
```

Related Topics

- HEADING
- SUPCOLHEADING
- IMMHEADING
- SUPPAGEHEADING
- PAGEHEADING
- TEXT

COLUMN

Defines the dimensions displayed as column members. Column members are displayed above data columns.

The order of the members in the command determines the order of the column headers in the report. The first header line of column members are from the same dimension as the first member in the *dimList*. The second line members are from the dimension of the second member, and so on. *dimList* can contain a maximum of one member from each dimension.

Once you have identified the column dimensions using this command, any members from those dimensions that are a part of the report are defined as the data columns. If a member is not selected from a column dimension, then the highest member in that dimension is used.

Syntax

```
<COLUMN ( dimList)
```

Parameters

dimList
Dimension name or a comma-delimited list of dimensions

Notes

- If dimension names contain spaces or consist of numbers, they must be enclosed in double quotes.

- When more than one dimension is specified, the first dimension in the list appears at the top of each column, the next dimension in the list appears lower on the page, nested below the first dimension, and so on.

Example

```
<COLUMN (Year, Scenario)
```

Creates a report with Year members at the head of each column. Nested below each Year member are columns headed by members of Scenario.

Related Topics

- PAGE
- ROW

COMMAS

Displays commas for numbers greater than 999 after commas have been suppressed with either a SUPCOMMAS or SUPALL command.

Syntax

```
{ COMMAS }
```

Example

```
{ COMMAS }
```

displays the number 1345 as 1,345 in the report.

Related Topics

- BRACKETS
- DECIMAL
- SUPALL
- SUPCOMMAS

CURHEADING

Enables the display of the currency conversion heading.

Syntax

```
{ CURHEADING }
```

Notes

This command turns on the display of the currency conversion heading, if it was suppressed with SUPCURHEADING. The currency conversion heading is displayed along with each page heading as it is displayed.

Example

See the example for the CURRENCY command.

Related Topics

- IMMHEADING
- CURRENCY
- SUPCURHEADING
- TEXT

CURRENCY

Converts data values in the report to the *targetCurrency*, and causes the currency heading to be displayed with the page heading. This does not convert the data in the cube: only in the report.

If the <CURRENCY command is not used, the data is reported as it is currently stored in the cube.

Syntax

```
<CURRENCY targetCurrency
```

Parameters

targetCurrency
Currency and currency type to display in the report. Currency type is optional. Up to four members (at most one from each currency cube dimension) in a cross-dimensional member (->)
For example:`USD, or USD->Actual->Jun99`

Notes

The currency conversion label, which identifies the currency used in the report, appears at the top of each page. See the TEXT command for custom placement of the currency label.

Example

```
<PAGE (Market, Measures, Scenario)
Illinois Sales Budget
 <COLUMN (Year)
 <CHILDREN Qtr1
<CURRENCY USD
<ICHILDREN Colas
     !
```

This example produces the following report:

```
Currency: USD
                  Illinois Sales Budget
                     Jan        Feb        Mar
                ========   ========   ========
100-10               360        370        380
```

```
100-20              240        260        280
100-30          #Missing   #Missing   #Missing
  100               600        630        660
```

Related Topics

- CURHEADING
- SUPCURHEADING
- TEXT

DATEFORMAT

Report Writer can be used prepare reports based on Date type members. Report writer display format directives that apply to numeric values apply to Date type values also. The following format directive formats all the output cells based on the outline's date format string:

{OUTFORMATTEDVALUES}

Report Writer post-processing commands that operate on numeric data, such as RESTRICT, TOP, BOTTOM and SORT, will operate on internal numeric date values.

Syntax

```
{ DATEFORMAT "string" }
```

Parameters

"string"
One of the date format strings supported by Essbase.

Related Topics

- WITHATTR

DECIMAL

Determines the number of decimal places to display in the report.

Syntax

```
{ DECIMAL decPlaces | VARIABLE [ columnN [columnN] ] }
```

Parameters

decPlaces
Number of decimal places to display. Positive integer from 0 (the default) to 40. Specify either VARIABLE or *decPlaces.*

VARIABLE
Allows the decimal to float; may switch to scientific notation (E+00 format) if necessary to display the significant digits of a number in the given column width.

columnN
Optional. Space-separated list of columns to be affected. If omitted, all columns are affected.

Notes

If you specify columns in the DECIMAL command *before* designating them with a member selection, the column numbers apply to all selected columns with a number that is a *multiple* of the specified column number.

The total number of specified column numbers should not exceed the value of *columnN*.

Default Value

Positive integer from 0 (the default) to 40.

Example

```
{DECIMAL 2}
```

Displays the number 65.4365 as 65.44 in the final report.

Related Topics

- BRACKETS
- COMMAS
- SUPBRACKETS
- SUPCOMMAS

DESCENDANTS

Adds the descendants of *mbrName* to the report, excluding *mbrName*.

Adding the descendants of the top of the dimension adds all the members in the dimension to the report, except the dimension top.

When a generation or level name is provided, this command returns all descendants at (or up to) the specified generation or level below *mbrName*.

Syntax

```
<DESCENDANTS mbrName
```

When used as an extraction command in conjunction with the < LINK command, the syntax is:

```
<DESCENDANTS (mbrName [, gen/levelName [, AT|UPTO]])
```

Parameters

mbrName
Name of parent of descendants.

gen/levelName
Optional. Generation or level name.

AT
Optional. Keyword indicating that all descendants at the specified generation or level should be returned. If AT or UPTO are omitted, this behavior is the default.

UPTO
Optional. Keyword indicating that all descendants between the root member and up to the specified generation or level should be returned. The root member is also returned.

Notes

- The IDESCENDANTS command includes the specified member.
- The DESCENDANTS command, when used with UPTO keyword, includes the specified member.
- Syntax specifying generation or level is available only when this command is used as an extraction command in conjunction with the <LINK command.

Example

Example 1 (DESCENDANTS)

```
<DESCENDANTS Year
```

Selects members Jan, Feb, Mar, Q1, Apr, May, June, Q2, Jul, Aug, Sep, Q3, Oct, Nov, Dec, Q4.

Example 2 (DESCENDANTS)

```
<LINK(<DESCENDANTS(Market,"Lev0,Market"))
OR
<LINK(<DESCENDANTS(Market,State))
!
```

This example produces the following report:

```
New York          #Missing
Massachusetts     #Missing
Florida           #Missing
Connecticut       #Missing
New Hampshire     #Missing
California        #Missing
Oregon            #Missing
Washington        #Missing
Utah              #Missing
Nevada            #Missing
Texas             #Missing
Oklahoma          #Missing
Louisiana         #Missing
New Mexico        #Missing
Illinois          #Missing
Ohio              #Missing
Wisconsin         #Missing
Missouri          #Missing
```

```
Iowa              #Missing
Colorado          #Missing
```

Example 3 (DESCENDANTS)

```
<LINK(<DESCENDANTS(Market,"Lev0,Market",UPTO))
OR
<LINK(<DESCENDANTS(Market,State,UPTO))
!
```

This example produces the following report:

```
    Market        #Missing
New York          #Missing
Massachusetts     #Missing
Florida           #Missing
Connecticut       #Missing
New Hampshire     #Missing
  East            #Missing
California        #Missing
Oregon            #Missing
Washington        #Missing
Utah              #Missing
Nevada            #Missing
  West            #Missing
Texas             #Missing
Oklahoma          #Missing
Louisiana         #Missing
New Mexico        #Missing
  South           #Missing
Illinois          #Missing
Ohio              #Missing
Wisconsin         #Missing
Missouri          #Missing
Iowa              #Missing
Colorado          #Missing
Central         #Missing
```

Related Topics

- CHILDREN
- ICHILDREN
- IDESCENDANTS
- LINK

DIMBOTTOM

Adds all level 0 dimension members to the report.

Syntax

```
<DIMBOTTOM mbrName
```

Parameters

mbrName
A member from the dimension.

Notes

This command adds all level 0 members to the report. *mbrName* is from the dimension whose level 0 members you want to select. Regardless of the member you specify, Essbase retrieves all level 0 members of that dimension. For example, if you specify Audio in the Demo Basic database, Essbase retrieves all the level 0 members under Audio and under Visual, because they are all level 0 members of the Product dimension.

Example

The command <DIMBOTTOM Audio adds all the members from the bottom of the Product dimension:

```
<PAGE (Market, Accounts, Scenario)
Chicago Sales Actual
      <COLUMN (Year)
      <ICHILDREN Year
<ROW (Product)
<DIMBOTTOM Audio
     !
```

This example produces the following report:

```
                    Chicago Sales Actual
                 Qtr1    Qtr2    Qtr3    Qtr4     Year
               =======  ======  ======  ======  =======
Stereo           2,591   2,476   2,567   3,035   10,669
Compact_Disc     3,150   3,021   3,032   3,974   13,177
Television       4,410   4,001   4,934   6,261   19,606
VCR              3,879   3,579   4,276   4,877   16,611
Camera           2,506   2,522   2,602   3,227   10,857
```

Related Topics

- DIMTOP

DIMEND

Specifies a dimension format to be processed after cycling through all members in the dimension.

Any formatting commands in the report script encountered immediately before the DIMEND command become formats for all dimensions in *dimList*.

When the report is produced, after processing all members from the specified dimension(s) associated with the format, including the processing of any groups of members from other dimensions which are nested inside the specified dimension(s), the DIMEND format is then processed.

Syntax

```
<DIMEND dimList
```

Parameters

dimList
List of members, separated by commas, that represents the dimensions for which the format is intended.

Notes

Formats are associated with the subsequent member, and are processed just prior to any output of that member. Therefore, without this command, in some situations it would be impossible to define a format to process after a member, especially if it was the last in a group.

Example

The UCOLUMNS format command underlines the columns in the report after every cycle through the Market dimension. In the report, you see children of Qtr1 for East followed by children of Qtr1 for West. After West, before starting over with East again, the processing of UCOLUMNS displays the underlines in the report.

```
<PAGE (Accounts, Scenario)
Sales Actual
 <COLUMN (Product)
 /* Applied after dimension processing*/
 <ICHILDREN Audio
<ROW (Market,Year)
 East West
  <CHILDREN Qtr1
{ UCOLUMNS }
<DIMEND(Market)
/* Puts underline after Market */
 !
```

This example produces the following report:

```
                                  Sales Actual
                                Stereo   Compact     Audio
                               ========  ========  ========
East         Jan                 2,788     3,550     6,338
             Feb                 2,482     3,285     5,767
             Mar                 2,569     3,458     6,027
West         Jan                 4,102     4,886     8,988
             Feb                 3,723     4,647     8,370
             Mar                 3,808     4,788     8,596
============ ============ ========  ========  ========
```

DIMTOP

Adds the top of the dimension for the member to the report.

Syntax

```
<DIMTOP mbrName
```

Parameters

mbrName
Single member from the dimension to designate.

Notes

You can specify any member from the dimension, including the top member.

Example

```
<DIMTOP Stereo
```

Adds the top of the Product dimension to the report.

```
<PAGE (Market, Accounts, Scenario)
Chicago Sales Actual

<COLUMN (Year)
<ICHILDREN Year

<ROW (Product)
<DIMTOP Stereo
 !
```

This example produces the following report:

```
                  Chicago Sales Actual
           Qtr1    Qtr2    Qtr3    Qtr4    Year
        ======= ======= ======= ======= =======
Product  16,536  15,599  17,411  21,374  70,920
```

Related Topics

- DIMBOTTOM
- DIMEND

DUPLICATE

Enables a member name to occur more than once in a dimension group selection.

This command is useful either of the following cases:

- in a multi-section report when the same row name appears more than once in each section

- when the row must be captured (without printing) once at the top of each section for calculation purposes, and included again later in the section for output

Syntax

```
<DUPLICATE mbrRange
```

Parameters

mbrRange
A single member name or selection command.

- Single member: A member already selected for the dimension can be selected again.
- Selection command: **<**DUPLICATE applies to all members selected by *mbrRange*. For example, **<**CHILDREN Accounts.

Notes

- If the DUPLICATE command is not used, by default the data extraction operation ignores duplicates in a group of members in the same dimension up to the point where a "!" is encountered.
- **<**DUPLICATE is not restricted to row dimensions. It can also be used to allow a repeat of a column or page dimension member.

Example

The following example is based on Demo Basic.

```
<PAGE (Market)
East
            <COLUMN (Scenario, Year)
                Budget  Actual
                 Jan     Jan

{ ORDER 2,0,1,3,4 WIDTH 12 0 1 NOINDENTGEN AFTER "%" 4
  SKIPONDIM Product LMARGIN 10
}
<ROW (Product, Accounts)

{ CALC ROW "Sales" OFF }
{ CALC COL "Actual~% Sales" = 2 % "Sales" 2 }

<ICHILDREN Visual

{ SAVEROW }   Sales
   Payroll
   Marketing
   Profit

<DUPLICATE  Sales
     !
```

This example produces the following report:

```
                                        East
  Budget                                Actual    Actual
     Jan                                   Jan   % Sales
========                               ========  ========
   1,200 Television  Payroll              1,236       25%
     440             Marketing              365        9%
   1,240             Profit               1,295       26%
   4,800             Sales                5,244      100%

   1,030 VCR         Payroll              1,044       25%
     150             Marketing              156        4%
   1,466             Profit               1,417       35%
   4,200             Sales                4,311      100%

   1,195 Camera      Payroll              1,167       42%
     300             Marketing              288       11%
     528             Profit                 400       19%
   2,850             Sales                2,656      100%

   3,425 Visual      Payroll              3,447       29%
     890             Marketing              809        8%
   3,234             Profit               3,112       27%
  11,850             Sales               12,211      100%
```

Related Topics

- PAGE
- COLUMN
- ROW

ENDHEADING

Ends the definition of the custom page heading displayed at the top of each page.

Syntax

```
{ ENDHEADING }
```

Notes

This command ends the definition of the custom page heading displayed at the top of each page in the report and in certain other situations. The STARTHEADING command begins the heading, and all commands encountered between the STARTHEADING and ENDHEADING are part of the heading definition.

Example

See example for the STARTHEADING command.

Related Topics

- HEADING

- IMMHEADING
- STARTHEADING
- SUPHEADING

EUROPEAN

Enables non-US number formatting by switching commas and decimal points in report data values.

Syntax

```
{ EUROPEAN }
```

Notes

In non-US number formatting, decimal points are used as the thousands separator, while commas separate the decimal from the integer.

Example

The following example is based on Demo Basic.

This report displays an example of the { EUROPEAN } command for the report based on Chicago followed by the { SUPEUROPEAN } command for the Boston report.

```
<PAGE(Market, Accounts, Scenario)
Chicago Sales Actual
      <COLUMN (Year)
      <CHILDREN Year

<ROW (Product)
<CHILDREN Audio
     !

{EUROPEAN}

Chicago Sales Actual

      <CHILDREN Year
      <CHILDREN Audio
     !
```

This example produces the following report:

```
                          Chicago Sales Actual

                    Qtr1     Qtr2     Qtr3     Qtr4
                ======== ======== ======== ========
Stereo             2,591    2,476    2,567    3,035
Compact_Disc       3,150    3,021    3,032    3,974

                         Chicago Sales Actual
                    Qtr1     Qtr2     Qtr3     Qtr4
                ======== ======== ======== ========
```

```
Stereo              2.591    2.476    2.567    3.035
Compact_Disc        3.150    3.021    3.032    3.974
```

Related Topics

- BRACKETS
- COMMAS
- DECIMAL
- SUPBRACKETS
- SUPCOMMAS
- SUPEUROPEAN

FEEDON

Enables page break insertion when the number of output lines on a page is greater than the PAGELENGTH setting.

Syntax

```
{ FEEDON }
```

Notes

This command enables page breaks (and, by default, a new page header) in a report when the number of output lines on a page is greater than the PAGELENGTH setting. Use after a SUPFEED command has disabled page breaks.

Default Value

The defaults are FEEDON and PAGELENGTH of 66 lines.

Related Topics

- PAGELENGTH
- SUPFEED

FIXCOLUMNS

Fixes the number of columns in the report regardless of how many columns are originally selected.

Syntax

```
{ FIXCOLUMNS number }
```

Parameters

number
Number of columns that you want to be displayed in your final report.

Notes

This command fixes the number of columns in the final report regardless of how many columns are originally selected. Only the first *number* of columns, which includes row name columns and data columns, are displayed.

This command is often used in conjunction with the ORDER command to select and reorder a subset of columns, cutting off excess columns.

Example

The following report script examples are designed for the Demo Basic cube, available in the gallery.

In the following example, `{ FIXCOLUMNS 3 }` causes only 3 columns, the row name column and two data columns, to be displayed even though there are additional columns for the data values of Qtr3, Qtr4 and Year.

```
<PAGE (Market, Accounts, Scenario)
Chicago Sales Actual

      <COLUMN (Year)
      <ICHILDREN Year

<ROW (Product)

{FIXCOLUMNS 3}
<ICHILDREN Audio
     !
```

This example produces the following report:

```
               Chicago Sales Actual

                  Qtr1     Qtr2
               ======== ========

Stereo            2,591    2,476
Compact_Disc      3,150    3,021
  Audio           5,741    5,497
```

This example used FIXCOLUMNS and ORDER to create a non-symmetric report.

```
<PAGE (Market, Accounts)
<COLUMN (Year, Scenario)
<ROW (Product)
{  ORDER 0,1,3,5,6 FIXCOLUMNS 5 }

Chicago   Sales

         Jan Feb Mar
         Actual Budget
```

```
<ICHILDREN Audio
      !



                              Chicago Sales

                    Jan       Feb       Mar       Mar
                 Actual    Actual    Actual    Budget
                ======== ======== ======== ========
Stereo               923       834       834       900
Compact_Disc       1,120     1,050       980     1,000
  Audio            2,043     1,884     1,814     1,900
```

Note that without the FIXCOLUMNS, the column headers would have been:

```
     Jan            Feb           Mar
Actual Budget  Actual Budget  Actual Budget
```

Related Topics

- ORDER

FORMATCOLUMNS

Expands the number of data columns when processed.

Syntax

```
{ FORMATCOLUMNS number }
```

Parameters

number
Expected number of columns that are encountered for formatting purposes.

Notes

Before any data column members are added, the report assumes only one data column. FORMATCOLUMNS (and other commands that reference column numbers) expands the number of data columns. FORMATCOLUMNS formats the report layout for a predetermined *number* of data columns for text and headings.

This command does not limit the number of output columns, as FIXCOLUMNS does. For example, a TEXT command used to center text can be issued before the addition of members that define the data columns, so centering would be off unless FORMATCOLUMNS is used to indicate the expected number of columns.

Example

{ FORMATCOLUMNS 10 } sets up an expected report size of 10 columns for formatting purposes.

Related Topics

- COLUMN
- NAMESCOL

GEN

Returns all members in a dimension with the specified generation name.

Syntax

```
GEN name, dimension
```

When used as an extraction command in conjunction with the <LINK command, the syntax is:

```
<GEN(dimension,genNumber)
```

Parameters

name
Generation name

dimension
Dimension name

genNumber
Generation number

Notes

- The report script can use either default generation names or user-defined generation names. Examples of default generation names are GEN1, GEN2, and so on.
- Use quotes around the GEN command if the dimension name contains spaces.

Example

```
GEN3,Year
```

Selects members of generation 3 from the Year dimension.

```
CityGen,State
```

Selects members of the user-defined generation name CityGen from the State dimension.

```
"GEN2,All Markets"
```

Selects members of generation 2 from the All Markets dimension.

```
<LINK (<GEN(Product,3) AND <LEV(Product,0))
```

Selects members with generation 3 and level 0 from the Product dimension.

Related Topics

- LEV
- LINK

HEADING

Displays the page heading: either the default heading or the heading as defined with the STARTHEADING and ENDHEADING commands.

If the SUPHEADING command has been used to turn off the display of the heading, this command also turns it back on, printing it just before the next non-suppressed output row, and thereafter at the top of every new page (unless SUPHEADING is used again). The heading automatically adjusts to any change in column or page selection members and is generated prior to the next output data row without the need for a further HEADING command.

> **Note:**
>
> The default heading includes the page member heading and the column member heading.

Syntax

```
{ HEADING }
```

Notes

- By default, page and column headers (together called the HEADING) are turned on. This means they are displayed prior to the first actual output row in a report, and are reset to display again whenever:
  - A new page is generated.
  - Any member in the page or column dimensions changes.
  - A specific COLHEADING, PAGEHEADING, or IMMHEADING dictates a new heading. Once they are reset to "display", they are output just prior to the new non-suppressed output row.
- To produce a new page and column heading immediately, without waiting for the next non-suppressed output line, use IMMHEADING.
- A heading normally comprises the page heading (members of the PAGE dimension) and the column heading (the current members of the column dimensions). The last line of the column header is also underlined.

- If STARTHEADING/ENDHEADING is used, the HEADING command redefines the makeup of the report heading.
- If SUPHEADING is used, the page heading and column heading can still be independently turned back on by the commands: PAGEHEADING and COLHEADING.

Example

See the example for the STARTHEADING command for an example of a heading.

Related Topics

- COLHEADING
- ENDHEADING
- IMMHEADING
- PAGEHEADING
- STARTHEADING
- SUPHEADING

IANCESTORS

Adds a member and its ancestors to the report.

Syntax

```
<IANCESTORS mbrName
```

Parameters

mbrName
Single member whose ancestors you want to include.

Notes

The ancestors of a member consists of its parent, that parent's parent, and so on, all the way to the top member of the dimension, including the specified member.

Related Topics

- CHILDREN
- DESCENDANTS
- PARENT

ICHILDREN

Selects the specified member and all members in the level immediately below it.

Syntax

```
<ICHILDREN mbrName
```

Parameters

mbrName
Dimension or member name of the parent

Notes

- If member names contain spaces (for example, Cost of Goods Sold or consist of numbers (for example, 100-10), they must be enclosed in double quotes.
- ICHILDREN lists members in their defined order, according to the database outline. The parent, which is the member specified as the parameter in the ICHILDREN command, is listed last.

Example

```
<ICHILDREN Year
```

Selects members Qtr1, Qtr2, Qtr3, Qtr4, and Year, in that order.

```
<ICHILDREN Qtr1
```

Selects members Jan, Feb, Mar, and Qtr1, in that order.

Related Topics

- ANCESTORS
- CHILDREN
- DESCENDANTS
- PARENT

IDESCENDANTS

Adds the specified member and its descendants to the report.

Syntax

```
<IDESCENDANTS mbrName
```

When used as an extraction command in conjunction with the <LINK command, the syntax is:

```
<IDESCENDANTS (mbrName [, gen/levelName [, AT|UPTO]])
```

Parameters

mbrName
Name of single member and descendants to add to the report.

gen/levelName
Optional. Generation or level name.

AT
Optional. Keyword indicating that all descendants at the specified generation or level should be returned. If AT or UPTO are omitted, this behavior is the default.

UPTO
Optional. Keyword indicating that all descendants between the root member and up to the specified generation or level should be returned. The root member is also returned.

Notes

Adding the descendants of the top of the dimension adds all the members in the dimension to the report, including the dimension top.

Example

Example 1

The following report script is designed for the Demo Basic cube, available in the gallery. `<IDESCENDANTS Product` adds all the members from the Product dimension to the report. Audio and Visual are the children of Product. Stereo and Compact_Disc are the children of Audio, while Television, VCR, and Camera are the children of Visual.

```
<PAGE (Market, Accounts, Scenario)
Chicago Sales Actual
<COLUMN (Year)
<ICHILDREN Year
<ROW (Product)
<IDESCENDANTS Product
!
```

This example produces the following report:

```
                    Chicago Sales Actual

                  Qtr1   Qtr2   Qtr3   Qtr4    Year
               ======= ====== ====== ====== =======

Stereo           2,591  2,476  2,567  3,035  10,669
Compact_Disc     3,150  3,021  3,032  3,974  13,177
  Audio          5,741  5,497  5,599  7,009  23,846
Television       4,410  4,001  4,934  6,261  19,606
VCR              3,879  3,579  4,276  4,877  16,611
Camera           2,506  2,522  2,602  3,227  10,857
  Visual        10,795 10,102 11,812 14,365  47,074
    Product     16,536 15,599 17,411 21,374  70,920
```

Example 2

The following report script is designed for the Demo Basic cube, available in the gallery.

```
<LINK(<IDESCENDANTS(Market,"Lev0,Market"))
!
```

This example produces the following report:

```
      Year Product Accounts Scenario

New_York           15,647
Boston             15,644
Chicago            15,285
San_Francisco      20,727
Seattle            14,667
Denver             13,016
Los_Angeles        14,429
Dallas              8,585
Houston             7,874
Phoenix             8,106
    Market        133,980
```

Example 3

The following report script is designed for the Demo Basic cube, available in the gallery.

```
<LINK(<IDESCENDANTS(Market,"Lev0,Market",UPTO))
!
```

This example produces the following report:

```
      Year Product Accounts Scenario

    Market        133,980
New_York           15,647
Boston             15,644
Chicago            15,285
  East             46,576
San_Francisco      20,727
Seattle            14,667
Denver             13,016
Los_Angeles        14,429
  West             62,839
Dallas              8,585
Houston             7,874
Phoenix             8,106
  South            24,565
```

Related Topics

- ANCESTORS
- CHILDREN
- DESCENDANTS
- PARENT
- LINK

IMMHEADING

Forces the immediate display of the heading without waiting for the next non-suppressed data row.

Syntax

```
{IMMHEADING}
```

Notes

Under normal circumstances, the heading only appears when at least one non-suppressed row is ready to be output on the current page. For this reason, when any suppression commands are turned on (such as SUPMISSING or SUPZEROS), and an entire page is suppressed, those page headers are normally skipped entirely.

An occurrence of the IMMHEADING command prints the header immediately, even if there is no current row to print. This command does not unsuppress data, but simply prints its headings.

This command is useful for inserting special formatting between the heading and the first output record. This is usually impossible because the header does not print until it is ready to output data immediately, that is, after any formats associated with the row have been processed.

Example

See the example for STARTHEADING for an example of a heading.

Related Topics

- ENDHEADING
- HEADING
- STARTHEADING
- SUPHEADING

INCEMPTYROWS

Displays empty rows of data, or rows that contain only zeros or `#MISSING` data values, in the final report.

Syntax

```
{ INCEMPTYROWS }
```

Notes

This command displays empty rows of data, or rows that contain only zeros or `#MISSING` data values, in the final report. This command is used to cancel the effects of SUPEMPTYROWS, SUPMISSINGROWS or SUPZEROROWS.

Related Topics

- INCMISSINGROWS

- INCZEROROWS
- SUPALL
- SUPEMPTYROWS
- SUPMISSINGROWS
- SUPZEROROWS

INCFORMATS

Controls the formats affected by the following commands: SUPMASK, SUPMISSING, and SUPZERO.

Syntax

```
{ INCFORMATS }
```

Notes

INCFORMATS prints out the format associated with a particular data row even when that row is suppressed. This means that line formatting, TEXT and MASK commands, and headers do not print unless their associated data rows print (or are not suppressed).

Default Value

Whenever the SUPMASK, SUPMISSING, or SUPZERO commands are used, by default SUPFORMATS is also set on, unless it has been specifically turned off.

Related Topics

- SUPFORMATS

INCMASK

Re-includes (turns back on) the mask that has been suppressed by the command SUPMASK.

Syntax

```
{ INCMASK }
```

Related Topics

- MASK

INCMISSINGROWS

Displays missing rows of data, or rows that contain all `#MISSING` data values, in the final report.

Syntax

```
{ INCMISSINGROWS }
```

Notes

This command displays missing rows of data, or rows that contain all `#MISSING` data values, in the final report. This command is used after a SUPMISSINGROWS or SUPEMPTYROWS command has been used to remove the missing rows from the final report.

Related Topics

- INCEMPTYROWS
- INCZEROROWS
- SUPALL
- SUPEMPTYROWS
- SUPMISSINGROWS
- SUPZEROROWS

INCZEROROWS

Includes rows that contain only data values of zero in the final report.

Syntax

```
{ INCZEROROWS }
```

Notes

This command displays zero rows of data, or rows that contain only data values of zero, in the final report. This command is used after a SUPZEROROWS or SUPEMPTYROWS command has been used to remove the zero rows from the final report.

Related Topics

- INCEMPTYROWS
- INCMISSINGROWS
- SUPALL
- SUPEMPTYROWS
- SUPMISSINGROWS
- SUPZEROROWS

INDENT

Shifts the first row names column in column-output order by the specified number of characters.

> **Note:**
>
> Default (No value): Indents columns by 2.

Syntax

```
{ INDENT [ offset ] }
```

Parameters

offset
Optional. Number of spaces to indent column 0 from the left boundary of the name column. Values:

- Positive number (up to 100): Shifts column 0 to the right.
- Negative number: Shifts column left, but cannot indent to the left of the start of the name column.
- 0: Returns column to original position.
- Default (no value): Indents columns by 2.

Notes

- { INDENT } shifts column 0 two characters to the right (the default) and decreases the size of column 1 by two.
- { INDENT 0 } resets the indent position to the original position regardless of the current position.
- When a member is indented, the width of the names column for that member is decreased to offset the indent. This does not shift the remaining columns in the report.
- Once the indented names column has been declared, you can use the ORDER command to moved it within the final output format or precede it with regular or calculated columns.
- Hierarchical relationships between row members are, by default, indicated by indentation. Indentation only applies to a group of rows generated together, such as when a single ! is used. If each consecutive row is generated independently, using its own !, then no indentation occurs.

Example

The following report script is designed for the Demo Basic cube, available in the gallery. The first report script for Chicago generates the default indentation, while the second report for Boston uses the { INDENT 10} command to shift the row names column 10 places to the right.

```
<PAGE (Market, Accounts, Scenario)
Chicago Sales Actual

<COLUMN (Year)
<ICHILDREN Year

<ROW (Product)
<ICHILDREN Audio
     !

{ INDENT 10 }
Boston Sales Actual

<ICHILDREN Year
<ICHILDREN Audio
```

```
!
```

This example produces the following report:

```
                        Chicago Sales Actual
                Qtr1     Qtr2     Qtr3     Qtr4     Year
            ======== ======== ======== ======== ========
Stereo         2,591    2,476    2,567    3,035   10,669
Compact_Disc   3,150    3,021    3,032    3,974   13,177
  Audio        5,741    5,497    5,599    7,009   23,846

                        Boston Sales Actual
                Qtr1     Qtr2     Qtr3     Qtr4     Year
            ======== ======== ======== ======== ========
     Stereo    2,450    2,341    2,377    2,917   10,085
     Compact_~ 3,290    3,034    3,132    3,571   13,027
       Audio   5,740    5,375    5,509    6,488   23,112
```

Related Topics

- INDENTGEN
- LMARGIN
- NOINDENTGEN

INDENTGEN

Indents subsequent row members in the row names column based on the generation in the cube outline.

Syntax

```
{ INDENTGEN [ offset ] }
```

Parameters

offset
Optional. Number that determines the amount to indent each succeeding generation from the previous generation. Default: INDENTGEN -2.

Notes

This command indents row members in the row names column based on the generation in the cube outline. Generations are counted starting, from 1, at the top of the dimension.

The top of the dimension is the first generation of the dimension. The children of the top are the second generation and so on. The *offset* determines how many characters each successive generation is indented. A positive number places the first generation at the leftmost position and indents each successive generation to the right. A negative number places the last generation on the left.

By default, all generations in a row group are indented by -2 for each relative generation difference. A row group is the group of row members selected before a an exclamation point (!) is encountered. If every row is generated separately (a ! after every row member) all the "groups" are one row only, and thus are not indented because there is no relative generation difference.

The indentation is based on relative rather than absolute generation differences so that if a report is working with only the lower levels of a many-level tree, all the row names do not start heavily indented, wasting column space. If *offset* is not given, it does not have a default value of -2.

Default Value

-2 is the default at the start of each report. {INDENTGEN}

Example

The following report script is designed for the Demo Basic cube, available in the gallery. The Chicago report uses the default generation indentation, followed by the Boston report, which uses `{INDENTGEN 3}`.

```
<PAGE (Market, Accounts, Scenario)
Chicago Sales Actual

      <COLUMN (Year)
      <ICHILDREN Year

<ROW (Product)
<IDESCENDANTS Product
     !

{ INDENTGEN 3 }
Boston Sales Actual

      <ICHILDREN Year

<IDESCENDANTS Product
     !
```

This example produces the following report:

```
                    Chicago Sales Actual
                Qtr1    Qtr2    Qtr3    Qtr4    Year
              ======= ======= ======= ======= =======
Stereo          2,591   2,476   2,567   3,035  10,669
Compact_Disc    3,150   3,021   3,032   3,974  13,177
  Audio         5,741   5,497   5,599   7,009  23,846
Television      4,410   4,001   4,934   6,261  19,606
VCR             3,879   3,579   4,276   4,877  16,611
Camera          2,506   2,522   2,602   3,227  10,857
  Visual       10,795  10,102  11,812  14,365  47,074
    Product    16,536  15,599  17,411  21,374  70,920
```

```
                          Boston Sales Actual
                    Qtr1    Qtr2    Qtr3    Qtr4    Year
                 ======= ======= ======= ======= =======

      Stereo       2,450   2,341   2,377   2,917  10,085
      Compact_Disc 3,290   3,034   3,132   3,571  13,027
   Audio           5,740   5,375   5,509   6,488  23,112
      Television   4,197   3,757   4,740   5,000  17,694
      VCR          3,645   3,663   4,201   4,509  16,018
      Camera       2,230   2,255   2,266   3,162   9,913
   Visual         10,072   9,675  11,207  12,671  43,625
Product           15,812  15,050  16,716  19,159  66,737
```

Related Topics

- INDENT
- NOINDENTGEN

IPARENT

Adds the specified member and its parent to the report.

Syntax

```
IPARENT mbrName
```

Parameters

mbrName
A single member, which must not be the top member of the dimension.

Notes

This command selects the current member and its parent, as defined in the database outline.

Example

```
<IPARENT Jan
```

Selects the member Jan and its parent member, Qtr1, in that order.

Related Topics

- PARENT

LATEST

Specifies a Dynamic Time Series member in a report script, which has reserved generation names that are defined in the database outline alias table (You must create a Dynamic Time Series member in the database outline before you use it in a report script.)

If you use the < LATEST syntax, the command is applied globally in the report script. If you use the *reservedName* (*mbrName*) syntax, Essbase applies the command only to the member listed in the syntax argument.

Syntax

1:

```
<LATEST mbrName
```

2:

```
<LATEST reservedName (mbrName)
```

Parameters

reservedName
One of the following pre-defined generation names:

- History-To-Date (H-T-D)
- Year-To-Date (Y-T-D)
- Season-To-Date (S-T-D)
- Period-To-Date (P-T-D)
- Quarter-To-Date (Q-T-D)
- Month-To-Date (M-T-D)
- Week-To-Date (W-T-D)
- Day-To-Date (D-T-D)

mbrName
The name of the level 0 member in the Time dimension.

Notes

- You can create an alias table in the database and replace the predefined generation names with alias names.
- The "latest" period must be a level 0 member in the time dimension.
- Sparse retrieval optimization eliminates requested sparse members that do not have any data blocks in the database.
- You cannot use attributes as arguments.

Example

```
<LATEST May
```

or

```
Q-T-D (May)
```

LEAVES

Adds level 0 contributing descendants (descendants with non #MISSING data) for the specified member to the report. This command is equivalent to getting DESCENDANTS of

mbrName at level 0 (for primary hierarchy) with SUPMISSINGROWS enabled for the dimension.

The Leaves command compactly describes large dimensions correlated with another dimension (many-to-many relationship) while avoiding internal expansion of members before retrieval.

Because large sets tend to be very sparse, only a few members contribute to the input member (have non #Missing values) and are returned. As a result, LEAVES consumes less memory resources than the equivalent nonempty Descendants function call, allowing for better scalability, especially in concurrent user environments.

Syntax

```
<LEAVES mbrName
```

Parameters

mbrName
Single member whose level 0 contributing descendants should be added to the report

Notes

- This command only applies to aggregate storage databases.
- This command cannot be used to rename a member in a report script.
- This command can only be used on rows or pages; if used on columns, an error is returned.
- This command is not supported in combination with name and alias sorting commands. Members will be returned in outline order.
- This command is not supported in combination with other selection commands for the same dimension.
- This command is not supported in combination with row and column calculation commands.

Example

```
<LEAVES("Personal Electronics")
!
```

This example produces the following report:

```
Digital Cameras  1,344,844
Camcorders       2,747,641
Photo Printers   1,325,536
Memory           2,607,186
Other Accessori~ 6,475,762
Boomboxes        1,720,446
Radios           1,657,511
```

"Handhelds" was omitted from the result set because it has a value of #MISSING, so it does not contribute to "Personal Electronics".

Related Topics

- DESCENDANTS

LEV

Returns all members in a dimension with the specified level name.

Syntax

```
LEV name,dimension
```

When used as an extraction command in conjunction with the <LINK command, the syntax is:

```
<LEV(dimension,levNumber)
```

Parameters

name
Level name

dimension
Dimension name

levNumber
Level number

Notes

- The report script can use either default level names or user-defined level names. Examples of default level names are LEV0, LEV1, and so on.
- Use quotes around the LEV command if the dimension name contains spaces.

Example

```
LEV0,Product
```

Selects members of level 0 from the Product dimension.

```
ZipCodeLev,State
```

Selects members of the user-defined generation name ZipCodeLev from the State dimension.

```
"LEV1,All Regions"
```

Selects members of level 1 from the All Regions dimension.

```
<LINK (<GEN(Market,2) AND NOT <LEV(Market,0))
```

Selects members of generation 2, but not level 0 from the Market dimension.

Related Topics

- GEN
- LINK

LINK

Uses the AND, OR, and NOT Boolean operators, combined with extraction commands, to refine member selections.

Syntax

```
<LINK (extractionCommand [operator extractionCommand])
```

Parameters

extractionCommand
Any of the following extraction commands or another AND/OR expression:

- <ALLINSAMEDIM (*member*)
- <ALLSIBLINGS (*member*)
- <ANCESTORS (*member*)
- <CHILDREN (*member*)
- <DESCENDANTS (*member* [, *gen/levelName* [, AT|UPTO]])
- <DIMBOTTOM (*member*)
- <DIMTOP (*member*)
- <IANCESTORS (*member*)
- <ICHILDREN (*member*)
- <IDESCENDANTS (*member* [, *gen/levelName* [, AT|UPTO]])
- <IPARENT (*member*)
- <MATCH (*Dimension*, *match_string*)
- <MEMBER (*member*)
- <OFSAMEGEN (*member*)
- <ONSAMELEVELAS (*member*)
- <PARENT (*member*)
- <UDA (*Dimension*, *UDA_name*)

Operator
Any of the following Boolean operators:

- Use the AND operator when all conditions must be met.
- Use the OR operator when either one condition or another must be met.

- Use the NOT operator to choose the inverse of the selected condition.

Notes

- NOT can only be associated with an extraction command, and does not apply to the entire expression. You must use NOT in conjunction with either the AND or OR operators.
- The MEMBER extraction command is only used within a LINK expression; you can use the MEMBER selection to select a single member. Do not use the MEMBER command outside of a LINK expression.
- You must select members from the same dimension, and all extraction command arguments must be enclosed in parentheses, as in the example above.
- Essbase evaluates operators from left to right. Use parentheses to group the expressions. For example: A OR B AND C is the same as ((A OR B) AND C). In the first expression Essbase evaluates the expression from left to right, evaluating A OR B before evaluating AND C. In the second expression, Essbase evaluates the sub-expression in parentheses (A OR B) before the whole expression, producing the same result. However, if you use (A OR (B AND C)), Essbase evaluates the sub-expression in parentheses (B AND C) before the whole expression, producing a different result.
- You can include up to 50 arguments in a LINK statement. For example, <LINK (A OR B OR (C AND D)) counts as four separate arguments.
- All extraction commands within a LINK statement need to select from the same dimensions; a command such as LINK (<ICHILDREN (east) AND <LEV (product,0)) causes a syntax error.
- If the LINK command returns an empty set of members, nothing is returned.

Example

```
<LINK (<UDA(product,Sweet) AND <LEV(product,0))
```

Selects all level 0 products that are sweet.

```
<LINK ((<IDESCENDANTS("100") AND <UDA(product,Sweet)) OR <LEV(product, 0))
```

Selects sweet products from the "100" sub-tree plus all level 0 products.

```
<LINK ((<IDESCENDANTS("100") AND NOT <UDA(product, Sweet)) OR <LEV(product,
0))
```

Selects non sweet products from the "100" sub-tree plus all level 0 products.

```
<LINK(<DESCENDANTS(Market,"Lev0,Market")

OR

(<DESCENDANTS(Market,"State")))
```

!

returns the following report (works on Sample Basic cube):

```
      Year Measures Product Scenario

New York            8,202
Massachusetts       6,712
Florida             5,029
Connecticut         3,093
New Hampshire       1,125
California         12,964
Oregon              5,062
Washington          4,641
Utah                3,155
Nevada              4,039
Texas               6,425
Oklahoma            3,491
Louisiana           2,992
New Mexico            330
Illinois           12,577
Ohio                4,384
Wisconsin           3,547
Missouri            1,466
Iowa                9,061
Colorado            7,227
```

Related Topics

- ALLINSAMEDIM
- ALLSIBLINGS
- ANCESTORS
- CHILDREN
- DESCENDANTS
- DIMBOTTOM
- DIMTOP
- IANCESTORS
- ICHILDREN
- IDESCENDANTS
- IPARENT
- MATCH
- OFSAMEGEN
- ONSAMELEVELAS
- PARENT
- UDA

LMARGIN

Sets the left margin for the report to *marginSize* characters.

Syntax

```
{ LMARGIN [ marginSize ] }
```

Parameters

marginSize
Optional numeric value: number of character spaces for left margin.

Notes

This command sets the left margin for the report to *marginSize* characters. In most cases the value of *marginSize* should be 2 or greater when printing on a laser printer.

Default Value

If the LMARGIN command is not used, the default is 0. If *marginSize* is omitted, it assumes a default value of 0.

Example

{LMARGIN 10} sets the left margin to 10 characters.

Related Topics

- INDENT
- PAGELENGTH

MASK

Overwrites the text in each output row with the specified characters at the specified position.

All non-blank characters in the *text* overwrite appear in the output line.

To create a mask of a blank character that overwrites output, enter ~ (the tilde character), rather than a blank space. The ~ is output as a blank space mask.

In addition to constant text, this command can use keywords to insert special strings into the report. These keywords begin with a "*" and must be entered. These are identical to the * keywords under the TEXT command, and are listed here for convenience. For a more complete discussion of * keywords, see the TEXT command.

You may include multiple sets of *position*s and *text* in a single MASK command.

Table 4-3 MASK Keywords

Keyword	Description
*APPNAME	Name of the application as set in the application definition.
*ARBOR	Version information from the Essbase Server.

Table 4-3 (Cont.) MASK Keywords

Keyword	Description
*COLHDR*number1 number2*	Column heading members from the report, usually used with SUPCOLHEADING.
*COLHDRFULL	Full column heading, along with underlines of the column headings and a 1-line skip.
*CURRENCY	Currency conversion label that indicates to which currency the data values have been converted at report time with the CURRENCY command.
*DATE	Date the report was generated.
*DATETIME	Date and time the report was generated.
*DBNAME	Name of the data base within the application.
*EDATE	Date in European (dd/mm/yy) format.
*EDATETIME	European format date (dd/mm/yy) and time.
*MACHINE	Network name for the computer that is running the Essbase Server.
*PAGEHDR*number*	Page member heading for the report, usually used with SUPPAGEHEADING.
*PAGENO	Page number for the current page.
*PAGESTRING	Page number preceded by the text "Page:"
*TIME	Time the report was generated.
*TIMEDATE	Time and date the report was generated.
*TIMEEDATE	Time and European format (dd/mm/yy) date.
*USERNAME	Name of the user generating the report.

Syntax

```
{ MASK charPosition "replacement" [ charPosition "replacement" ] }
```

Parameters

charPosition
Character position at which to start replacing text.

"replacement"
New text, enclosed by quotation marks, with which to overwrite the original output.

Notes

- MASK is a setting command.
- To replace a space, use a ~ (the tilde character).
- If you want to produce an output file in comma-delimited format, use the SUPCOMMAS command, as in the example, to suppress the commas in numeric values. You can also use the SUPPAGEHEADING command to suppress page headings in the comma-delimited file.

Example

The following example is based on Sample Basic.

```
<ROW (Year, Measures, Product, Market, Scenario)
{SUPPAGEHEADING}
{ROWREPEAT}
{DECIMAL 2}
{SUPCOMMAS}
{MASK 3 "," 22 "," 40 "," 55 "," 74 ","}
<CHILDREN Qtr1
Sales
<CHILDREN Colas
East
Budget
     !
```

This example produces the following report:

```
Jan,        Sales,       100-10,      East,       Budget,        1690.00
Jan,        Sales,       100-20,      East,       Budget,         190.00
Jan,        Sales,       100-30,      East,       Budget,          80.00
Feb,        Sales,       100-10,      East,       Budget,        1640.00
Feb,        Sales,       100-20,      East,       Budget,         190.00
Feb,        Sales,       100-30,      East,       Budget,          90.00
Mar,        Sales,       100-10,      East,       Budget,        1690.00
Mar,        Sales,       100-20,      East,       Budget,         200.00
Mar,        Sales,       100-30,      East,       Budget,         100.00
```

Related Topics

- INCMASK
- SUPMASK
- TEXT

MATCH

Performs wildcard member selection. Essbase searches for member names that match the pattern you specify, and returns the member names it finds.

You can use more than one MATCH command in your report.

If Essbase does not find any members that match the chosen character pattern, it returns no member names and continues with the other report commands in your report.

Syntax

```
<MATCH ("Member"|"Gen"|"Level","Pattern")
```

Parameters

"Member"
Member name at the top of the member hierarchy you want to search. Essbase searches the member name and its descendants.
If the client is set to use aliases in place of member names, the MATCH command searches for alias names.

"Gen"
Default or user-defined name of the generation you want to search.

"Level"
Default or user-defined name of the level you want to search.

"Pattern"
The character pattern you want to search for, including a wildcard character (* or ?).

- ? Substitutes one occurrence of any character; can be placed anywhere in the string.
- * Substitutes any number of characters; must be used at the end of the string.
- You can include spaces in the character pattern. Ensure that you enclose the pattern in quotation marks ("").

Example

The following report is based on the Sample Basic cube, and uses a * wildcard pattern search.

```
<PAGE (Measures, Market, Scenario)
Sales East Actual
<COLUMN (Year)
<MATCH (Year, J*)
<ROW (Product)
lev1,Product
!
```

Essbase searches the Year dimension and finds 3 months beginning with the letter "J":Jan, Jun, and Jul. The report returns the following data:

```
                    Sales East Actual
                     Jan        Jun       Jul
                  ========   ========  ========
100                2,105      2,625     2,735
200                1,853      2,071     1,992
300                1,609      1,795     1,926
400                1,213      1,404     1,395
Diet                 620        712       778
```

The following report is based on the Sample Basic cube, and uses a ? wildcard pattern search.

```
<PAGE (Measures, Market, Scenario)
Sales East Actual
<COLUMN (Year)
```

```
<ROW (Product)
<MATCH (Product, "???-10")
!
```

Essbase searches the Product dimension and finds all instances of products ending in "-10", and preceded by three characters. The report returns the following data:

```
          Sales East Actual Year
100-10              23,205
200-10               8,145
300-10              13,302
400-10               6,898
```

MATCHEX

Performs wildcard member selection. Essbase searches for member names that match the pattern you specify, and returns the member names it finds.

Provides an optional parameter to specify if the search should be performed on member names or aliases, regardless of whether the query output in the report script uses members or aliases.

If you defined the members names in the database you are searching as case-sensitive, the search is case-sensitive. Otherwise, the search is not case-sensitive.

You can use more than one MATCHEX command in your report.

If Essbase does not find any members that match the chosen character pattern, it returns no member names and continues with the other report commands in your report.

Syntax

```
<MATCH ("Member"|"Gen"|"Level","Pattern",ALT|MBR|BOTH)
```

Parameters

"Member"
Member name at the top of the member hierarchy you want to search. Essbase searches the member name and its descendants.

"Gen"
Default or user-defined name of the generation you want to search.

"Level"
Default or user-defined name of the level you want to search.

"Pattern"
The character pattern you want to search for, including a wildcard character (* or ?).

- ? Substitutes one occurrence of any character; can be placed anywhere in the string.
- * Substitutes any number of characters; must be used at the end of the string.

- You can include spaces in the character pattern. Ensure that you enclose the pattern in quotation marks ("").

ALT|MBR|BOTH
Optional—The `ALT|MBR|BOTH` option overrides default pattern matching specifications. The default pattern matching uses aliases for pattern matching if aliases are to be displayed in report output, but uses names otherwise.

- `ALT`

  Filter using aliases of selected members from selected alias table for pattern matching. The alias table is set by `outaltselect`, otherwise default alias table.

- `MBR`

  Filters using member names of selected members for pattern matching.

- `BOTH`

  Filters using member names as well as aliases for selected members from selected alias table for pattern matching. The alias table is set by `outaltselect`, otherwise default alias table.

Example

The following report script example is designed for the Sample Basic cube, available in the gallery.

```
<OUTALTSELECT default
<MATCHEX(Product,Caff*,ALT)
!
<OUTALTSELECT "Default"
<NewAlt "Product"
<OUTMBRNAME
<LINK(<MATCHEX("Product", "100", MBR) AND <IDESCENDANTS("Product"))
!
```

This example produces the following report:

```
      Year Measures Market Scenario

100-30              1,983
Colas              30,468
```

MEANINGLESSTEXT

Displays `#ME` in place of a specified text string. Used with `OUTMEANINGLESS`.

Syntax

```
{ MEANINGLESSTEXT "string" }
```

Parameters

"string"
The specified string to be replaced with `#ME` in cells.

Related Topics

- WITHATTR

MISSINGTEXT

Replaces the `#MISSING` with *text* when a missing data value is generated on a line in the report. If you do not specify *text*, the default `#MISSING` is restored.

Syntax

```
{MISSINGTEXT [ "text" ] }
```

Parameters

text
Optional text to use for missing values.

Notes

- MISSINGTEXT is a setting command.
- The label must be enclosed in double quotes.

Example

```
{MISSINGTEXT "Not Applicable."}
```

Related Topics

- SUPEMPTYROWS
- SUPMISSINGROWS
- SUPZEROROWS
- TEXT

NAMESCOL

Determines the location of the row names columns in the report.

Use the NAMESCOL command *after* entering the column members in the report. You can get the same result with the ORDER command, but NAMESCOL is more convenient for moving just the names columns and when the number of data columns can vary.

Syntax

```
{ NAMESCOL [ columnList | CENTERED ] }
```

Parameters

columnList
Optional list, separated by spaces, of the locations for each row name. List position corresponds to the number of the affected column.

NAMESCOL shifts the remaining columns left or right to make room for the columns of row member names.

CENTERED (or C)
Key word that centers the column of row member names in the report. Before using this parameter:

- Define all columns in the report.
- Use the FORMATCOLUMNS command to set the number of columns.

Notes

`{ NAMESCOL c c 10 }` places the first two row name columns in the center of the report, and the third row name column in column 10.

Example

The following report script is designed for the Demo Basic cube, available in the gallery. `{ NAMESCOL c }` places the row names column in the following report in the center of the report.

```
<PAGE (Market, Accounts, Scenario)
Chicago Sales Actual

      <COLUMN (Year)
      <ICHILDREN Year

<ROW (Product)
{ NAMESCOL c }
<ICHILDREN Audio
     !
```

This example produces the following report:

```
Chicago Sales Actual

   Qtr1   Qtr2                Qtr3   Qtr4     Year
 ====== ======              ====== ====== ========
  2,591  2,476 Stereo        2,567  3,035   10,669
  3,150  3,021 Compact_Disc  3,032  3,974   13,177
  5,741  5,497 Audio         5,599  7,009   23,846
```

Related Topics

- FIXCOLUMNS
- FORMATCOLUMNS
- NAMEWIDTH
- ORDER

NAMESON

Turns on the display of column(s) of row member names.

Syntax

```
{ NAMESON }
```

Notes

This command reverses the effect of a SUPALL or SUPNAMES command. These commands turn off the display of column(s) of row member names in the final report.

Related Topics

- SUPALL
- SUPNAMES

NAMEWIDTH

Determines the width of all row name columns in the report.

Syntax

```
{ NAMEWIDTH [ width ] }
```

Parameters

width
Optional. Specifies the total number of characters displayed for each column.

Notes

This command determines the width of the column for all row member names in the report. Member names are truncated when necessary to fit in the column and the tilde character(~) signifies that there are letters not visible in the report. If each names column needs a different width, use the WIDTH command.

Default Value

If *width* is not given, then a default value of 17 is assumed.

Example

The following report script is designed for the Demo Basic cube, available in the gallery. The first report for Chicago displays the default width for the row names column, while the `{ NAMEWIDTH 25 }` command in the Boston report increases the width of the row names column to 25.

```
<PAGE (Market, Accounts, Scenario)
Chicago Sales Actual

      <COLUMN (Year)
      <ICHILDREN Year
```

```
<ROW (Product)
<CHILDREN Audio
     !

{ NAMEWIDTH 25 }

Boston Sales Actual

      <ICHILDREN Year

<CHILDREN Audio
     !
```

This example produces the following report:

```
                    Chicago Sales Actual
                Qtr1   Qtr2   Qtr3   Qtr4    Year
               ======= ====== ====== ====== =======
Stereo           2,591  2,476  2,567  3,035  10,669
Compact_Disc     3,150  3,021  3,032  3,974  13,177

                           Boston Sales Actual
                      Qtr1   Qtr2   Qtr3   Qtr4    Year
                     ======= ====== ====== ====== =======
Stereo                 2,450  2,341  2,377  2,917  10,085
Compact_Disc           3,290  3,034  3,132  3,571  13,027
```

Related Topics

- NAMESCOL
- WIDTH

NEWPAGE

Inserts a new page in the report regardless of how many lines have been generated for the current page.

Syntax

```
{ NEWPAGE }
```

Notes

This command inserts a new page in the report regardless of how many lines have been generated for the current page. The report continues with a new page for the next row. A new heading is displayed at the top of the new page, assuming the page has at least one non-suppressed output data row, unless SUPHEADING is used.

Related Topics

- FEEDON
- SUPFEED

NOINDENTGEN

Displays all row member names left-aligned in the row names column without indenting members based on generation in the database outline.

Syntax

```
{ NOINDENTGEN }
```

Notes

This command displays all row member names left-justified in the row names column without indenting members based on generation in the Database Outline. Indenting generations is generally not useful if you sort member names alphabetically by name in a report.

Default Value

By default, each generation is indented unless NOINDENTGEN is used.

Related Topics

- INDENT
- INDENTGEN

NOPAGEONDIMENSION

Turns off insertion of a new page when the member in the report from the same dimension as *mbrName* changes in a row of the report.

Syntax

```
{ NOPAGEONDIMENSION mbrName }
```

Parameters

mbrName
Single member whose dimension is part of the PAGEONDIMENSION declaration.

Notes

This command turns off insertion of a new page when the member in the report from the same dimension as *mbrName* changes in a row of the report. It is needed only after the PAGEONDIMENSION command has been used.

Example

{NOPAGEONDIMENSION Year} prevents a new page from being inserted when a member in the dimension Year changes, after PAGEONDIMENSION Year has been set.

Related Topics

- NOSKIPONDIMENSION
- PAGEONDIMENSION
- SKIPONDIMENSION

NOROWREPEAT

Prevents row member names from being repeated on each line of the report if the row member name does not change on the next line. This is the default.

Syntax

```
{ NOROWREPEAT }
```

Notes

This command prevents row member names from being repeated on each line of the report if the row member name does not change on the next line. NOROWREPEAT is only used to cancel the effects of the ROWREPEAT command. The ROWREPEAT command causes all row member names to be displayed on every line of the report even if the names for some members are the same.

Default Value

NOROWREPEAT is the default; you need only use this command after using ROWREPEAT.

Example

The following example is based on the Demo Basic cube, available in the gallery.

The following report is an example of the default behavior for row names not repeating. The names only print when they change.

```
<PAGE (Market, Accounts)
Chicago Sales

      <COLUMN (Scenario)
      Actual

<ROW (Year, Product)
{ NOROWREPEAT }
<ICHILDREN Qtr1
<ICHILDREN Audio
!
{ ROWREPEAT }
<ICHILDREN Qtr2
!
```

Which produces the following report:

```
                    Chicago Sales Actual

Jan              Stereo                923
                 Compact_Disc        1,120
                   Audio             2,043
Feb              Stereo                834
                 Compact_Disc        1,050
                   Audio             1,884
Mar              Stereo                834
                 Compact_Disc          980
```

```
                    Audio             1,814
  Qtr1              Stereo            2,591
                    Compact_Disc      3,150
                    Audio             5,741

                      Chicago Sales Actual

Apr                 Stereo              821
Apr                 Compact_Disc        985
Apr                 Audio             1,806
May                 Stereo              821
May                 Compact_Disc      1,014
May                 Audio             1,835
Jun                 Stereo              834
Jun                 Compact_Disc      1,022
Jun                 Audio             1,856
  Qtr2              Stereo            2,476
  Qtr2              Compact_Disc      3,021
  Qtr2              Audio             5,497
```

Related Topics

- ROWREPEAT

NOSKIPONDIMENSION

Prevents insertion of a new line when a member from the same dimension as *mbrName* changes in a row of the report.

Syntax

```
{ NOSKIPONDIMENSION mbrName }
```

Parameters

mbrName
Single member that defines a dimension for which to halt line-skipping.

Notes

This command turns off insertion of a new line when the member in the report from the same dimension as *mbrName* in the command changes in a row of the report.

This command is required only after the SKIPONDIMENSION command.

Example

```
{NOSKIPONDIMENSION Year}
```

prevents the insertion of a new line when a member in the dimension Year changes after an occurrence of SKIPONDIMENSION Year.

Related Topics

- NOPAGEONDIMENSION
- PAGEONDIMENSION

- SKIPONDIMENSION

NOUNAMEONDIM

Turns off underlining for the new member name when the member in the report from the same dimension as the specified member changes in a row of the report.

Syntax

```
{ NOUNAMEONDIM mbrName }
```

Parameters

mbrName
Member whose dimension is part of the UNAMEONDIM declaration.

Notes

This command turns off underlining for a new row when the member in the report from the same dimension as *mbrName* changes. It is needed only after the UNAMEONDIM command has been used.

Related Topics

- NOPAGEONDIMENSION
- NOSKIPONDIMENSION
- PAGEONDIMENSION
- SKIPONDIMENSION
- UNAMEONDIMENSION

OFFCOLCALCS

Disables all column calculations within the report.

Syntax

```
{ OFFCOLCALCS }
```

Notes

This command disables all column calculations within the report, for example, those calculations set by CALCULATE COLUMN. The column(s) defined for the calculation(s) display the value `#MISSING` to indicate no value was calculated for the column. This command temporarily turns off the calculations but does not remove them.

Example

See the example for the CALCULATE COLUMN command.

Related Topics

- CALCULATE COLUMN
- CLEARROWCALC
- CLEARALLROWCALC

- OFFROWCALCS
- ONCOLCALCS
- ONROWCALCS
- PRINTROW
- REMOVECOLCALCS
- SETROWOP

OFFROWCALCS

Temporarily disables all row calculations.

Syntax

```
{ OFFROWCALCS }
```

Notes

This command temporarily disables all row calculations, for example, those calculations set by CALCULATE ROW. Subsequent rows of data do not contribute to a calculated row with an active SETROWOP until ONROWCALCS is issued. Disabling the calculations does not reset the values of the rows to zero. Instead, rows of data in the report after the command are ignored in the calculations.

Example

See the examples for the CALCULATE ROW command.

Related Topics

- CALCULATE ROW
- CLEARROWCALC
- CLEARALLROWCALC
- OFFCOLCALCS
- ONCOLCALCS
- ONROWCALCS
- PRINTROW
- REMOVECOLCALCS
- SETROWOP

OFSAMEGEN

Adds to the report the members from the same dimension and generation as the specified member.

Syntax

```
<OFSAMEGEN mbrName
```

Parameters

mbrName
Single member that designates the dimension and generation to retrieve.

Notes

Generations are counted starting at the top of the dimension. The top of the dimension is generation 1; its children are generation 2. Each child's generation number is one greater than its parent's.

Example

The following report script is designed for the Demo Basic cube, available in the gallery.

```
<PAGE (Market, Accounts, Scenario)
Chicago Sales Actual

 <COLUMN (Year)
 <ICHILDREN Year

<ROW (Product)
<OFSAMEGEN VCR
 !
```

This example produces the following report:

```
                    Chicago Sales Actual

                 Qtr1   Qtr2   Qtr3   Qtr4    Year
               ======= ====== ====== ====== =======
Stereo           2,591  2,476  2,567  3,035  10,669
Compact_Disc     3,150  3,021  3,032  3,974  13,177
Television       4,410  4,001  4,934  6,261  19,606
VCR              3,879  3,579  4,276  4,877  16,611
Camera           2,506  2,522  2,602  3,227  10,857
```

Related Topics

- ALLINSAMEDIM
- CHILDREN
- DESCENDANTS
- ONSAMELEVELAS

ONCOLCALCS

Re-enables column calculations in the report after they have been disabled by OFFCOLCALCS.

Syntax

```
{ ONCOLCALCS }
```

Notes

This command is required after the OFFCOLCALCS command, which disables column calculations.

Example

See the example for the CALCULATE COLUMN command.

Related Topics

- CALCULATE COLUMN
- CLEARROWCALC
- CLEARALLROWCALC
- OFFCOLCALCS
- OFFROWCALCS
- ONROWCALCS
- PRINTROW
- REMOVECOLCALCS
- SETROWOP

ONROWCALCS

Re-enables all row calculations after they have been disabled by OFFROWCALCS. Each subsequent row of data after using the command is calculated.

Syntax

```
{ ONROWCALCS }
```

Notes

This command is required after the OFFROWCALCS command, which disables the row calculation(s).

Example

See the example for the CALCULATE ROW command.

Related Topics

- CALCULATE ROW
- CLEARROWCALC
- CLEARALLROWCALC
- OFFCOLCALCS
- ONCOLCALCS
- REMOVECOLCALCS

ONSAMELEVELAS

Adds to the report all members on the same level as the specified member.

Syntax

```
<ONSAMELEVELAS mbrName
```

Parameters

mbrName
Single member that designates the dimension and generation to retrieve.

Notes

Levels are counted up from the bottom of the dimension. Members in the cube outline with no children are level 0; their parents are level 1, and so on. The level for a child is always 1 lower than its parent.

Example

The following report script is designed for the Demo Basic cube, available in the gallery.

```
<PAGE (Market, Accounts, Scenario)
Chicago Sales Actual

      <COLUMN (Year)
      <ICHILDREN Year

<ROW (Product)
<ONSAMELEVELAS Audio
     !
```

This example produces the following report:

```
                                Chicago Sales Actual

                     Qtr1     Qtr2     Qtr3     Qtr4     Year
                 ======== ======== ======== ======== ========

Audio               5,741    5,497    5,599    7,009   23,846
Visual             10,795   10,102   11,812   14,365   47,074
```

Related Topics

- ALLINSAMEDIM
- CHILDREN
- DESCENDANTS
- OFSAMEGEN

ORDER

Specifies the order of columns in a report, based on the original ordering of the columns.

Make sure you specify all the report columns in the ORDER command unless you use FIXCOLUMNS. ORDER simply moves the listed columns to locations in the final report but does not shift the unlisted columns to make room for the columns moved. If you have a five column report and you specify the command {ORDER 2 3 4}, you see columns 2, 3 and 4 in the report followed again by columns 3 and 4. If you really want a 3 column report, use {FIXCOLUMNS 3}.

Calculated data columns have column numbers which begin after the last regular data column. In other words, if each output data row had:

- 2 row names;
- 3 regular data columns; and
- 2 calculated data columns

then columns 0 and 1 are the row name column numbers; 2, 3, and 4 are the regular data column numbers; and 5 and 6 are the calculated-data column members.

Syntax

```
{ ORDER columnList }
```

Parameters

columnList
Numeric designations of the columns to rearrange, separated by a space between each column number.
Each column number represents the *initial* positions of each column (from 0 to *n* where *n* is the last column, counting names, data, and calculated columns, respectively).
The position of each number in the *columnList* represents the new order in which you want the columns to be displayed.

> **Note:**
>
> Using the ORDER command without a *columnList* resets the column order to the default setting (that is, 0, 1, 2, 3, 4, and so on).

Notes

- ORDER is a setting command.
- The first name column is designated as column 0. Column numbers then increment, starting with any additional row name columns, then the data columns, followed by calculated data columns.

Example

The following example is based on the Sample Basic database.

```
<PAGE (Measures, Market)
Texas Sales
```

```
{ORDER 0 1 4 2 5 3 6 BLOCKHEADERS}
     <COLUMN (Scenario, Year)
     Actual Budget
     Jan Feb Mar
<ROW (Product)
<DESCENDANTS "100"
     !
```

This script arranges the Jan, Feb, and Mar columns side-by-side.

```
                                Sales Texas
                  Actual   Budget   Actual   Budget   Actual   Budget
                     Jan      Jan      Feb      Feb      Mar      Mar
                ======== ======== ======== ======== ======== ========
100-10               452      560      465      580      467      580
100-20               190      230      190      230      193      240
100-30           #Missing #Missing #Missing #Missing #Missing #Missing
```

Related Topics

- FIXCOLUMNS
- NAMESCOL

ORDERBY

Orders the rows in a report according to data values in the specified columns.

Syntax

```
<ORDERBY ( [<rowgroupDimension>,] <column> [direction>]{,<column>
[<direction>]})
```

Parameters

<Optional rowgroup Dimension>
Row grouping dimension that determines the rows to sort as a set.

<column>
@DATACOLUMN (<*colnumber*>) | @DATACOLUMN (<*colnumber*>)
where <*colnumber*> is the target column number; must be between 1 and the maximum number of columns in the report.

<direction>
You can specify multiple columns with different sorting directions where:

- ASC is the ascending sort
- DESC is the descending sort

Notes

You can use ORDERBY, TOP, BOTTOM, and RESTRICT in the same report script, but you can use each command only once per report. If you repeat the same command in a second report in the same report script, the second command overwrites the first. Place global script formatting commands, for example, SAVEROW, before a PAGE, COLUMN command or associated member (for example, <ICHILDREN or <IDESCENDANTS).

If any of the ORDERBY, TOP, BOTTOM, or RESTRICT commands exist together in a report script, the row group dimension *<rowgroupDimension>* should be the same. This restriction removes any confusion about the sorting and ordering of rows within a row group. Otherwise, an error is issued.

If TOP or BOTTOM commands exist in the same report with ORDERBY, the ordering column of ORDERBY need not be the same as that of TOP or BOTTOM.

The ORDERBY, TOP and BOTTOM commands sort a report output by its data values. The RESTRICT command restricts the number of valid rows for the report output. Their order of execution is:

1. Any sorting command that sorts on member names (for example <SORTDESC or <SORTASC)
2. RESTRICT
3. TOP and BOTTOM
4. ORDERBY

This order of execution applies irrespective of the order in which the commands appear in the report script.

For an example that uses TOP, BOTTOM, ORDERBY, and RESTRICT together, see the entry for the BOTTOM command.

Default Value

The innermost row grouping is the default row group dimension. Default direction is ascending.

Example

The following report script is designed for the Sample Basic cube, available in the gallery.

```
//Page dimension
<PAGE("Measures")

//Column dimensions
<COLUMN("Scenario", "Year")

//Row dimensions
<ROW("Market", "Product")

// Page Members
"Sales"

// Column Members
"Scenario"

"Jan" "Feb" "Mar"

// Row Members
"New York"

"Product" "100" "100-10" "100-20" "100-30" "200" "200-10" "200-20" "200-30"
"200-40" "300" "300-10" "300-20" "300-30" "400" "400-10" "400-20" "400-30"
"Diet" "100-20" "200-20" "300-30"

// Data sorting
```

```
<ORDERBY ("Product", @DATACOLUMN(1) ASC, @DATACOLUMN(2) DESC, @DATACOLUMN(3)
ASC)
!
// End of report
```

Which produces the following report:

```
                                        Sales Scenario

                                     Jan      Feb      Mar
                                ======== ======== ========

New York         100-20          #Missing #Missing #Missing
                 100-30          #Missing #Missing #Missing
                 200-20          #Missing #Missing #Missing
                 200-30          #Missing #Missing #Missing
                 300-30          #Missing #Missing #Missing
                   Diet          #Missing #Missing #Missing
                 200-10                61       61       63
                 400-30               134      189      198
                 300-20               180      180      182
                 400-20               219      243      213
                 400-10               234      232      234
                 300-10               483      495      513
                 200-40               490      580      523
                   200                551      641      586
                   400                587      664      645
                   300                663      675      695
                 100-10               678      645      675
                   100                678      645      675
                     Product        2,479    2,625    2,601
```

Related Topics

- RESTRICT
- TOP
- BOTTOM

OUTALT

Sets the output alias to the database outline alias name, as defined in the current alias table.

Syntax

```
<OUTALT
```

Notes

- OUTALT cannot be used on duplicate member outlines. See REPALIAS.
- OUTALT is used to reset the output alias to the Database Outline alias name. Use this command to restore the default alias after OUTALTMBR or OUTMBRALT have been used to redefine the alternate name.

- You must precede the OUTALT command with OUTALTNAMES to display the alias (rather than the member name).

Example

The following example is based on the Sample Basic database.

```
<PAGE (Product, Measures)
<COLUMN (Scenario, Year)
{OUTALTNAMES}
<OUTMBRALT
Actual
<CHILDREN Qtr1
<ROW Market)
<IDESCENDANTS "300"
<OUTALT
<IDESCENDANTS "300"
     !
<OUTALT
<IDESCENDANTS "300"
     !
```

This example produces the following report:

```
                  300-10 Measures Actual

                       Jan      Feb      Mar
                  ======== ======== ========
Market                 800      864      880

               Vanilla Cream Measures Actual
                       Jan      Feb      Mar
                  ======== ======== ========
Market                 220      231      239

                 Diet Cream Measures Actual
                       Jan      Feb      Mar
                  ======== ======== ========
Market                 897      902      896

                 Cream Soda Measures Actual
                       Jan      Feb      Mar
                  ======== ======== ========
Market               1,917    1,997    2,015

                 Dark Cream Measures Actual
                       Jan      Feb      Mar
                  ======== ======== ========
Market                 800      864      880

               Vanilla Cream Measures Actual
                       Jan      Feb      Mar
                  ======== ======== ========
Market                 220      231      239

                  Diet Cream Measures Actual
```

```
                         Jan      Feb      Mar
                    ======== ======== ========
Market                   897      902      896

                    Cream Soda Measures Actual
                         Jan      Feb      Mar
                    ======== ======== ========
Market                 1,917    1,997    2,015
```

Related Topics

- OUTALTMBR
- OUTALTNAMES
- OUTMBRALT
- OUTMBRNAMES

OUTALTMBR

Sets the output alias to the alias name (as defined in the current alias table in the cube outline) followed by the member name.

Syntax

```
<OUTALTMBR
```

Notes

- Separate the alias and member name with a single space.
- To produce reports that display the alternate name for a member, you must also use the { OUTALTNAMES } command. If no alternate name exists, only the member name is displayed.
- OUTALTMBR cannot be used on duplicate member outlines. See REPALIASMBR.

Example

The following example is based on Sample Basic.

```
<PAGE (Product, Measures)
<COLUMN (Scenario, Year)
{OUTALTNAMES}
<OUTALTMBR
Actual
<CHILDREN Qtr1
<ROW (Market)
<IDESCENDANTS "300"
     !
```

This example produces the following report:

```
                      300-10 Measures Actual
                         Jan      Feb      Mar
                    ======== ======== ========
```

```
Market                800      864      880

            Vanilla Cream 300-20 Measures Actual
                      Jan      Feb      Mar
                 ======== ======== ========
Market                220      231      239

             Diet Cream 300-30 Measures Actual
                      Jan      Feb      Mar
                 ======== ======== ========
Market                897      902      896

               Cream Soda 300 Measures Actual
                      Jan      Feb      Mar
                 ======== ======== ========
Market              1,917    1,997    2,015
```

Related Topics

- OUTALT
- OUTALTNAMES
- OUTMBRALT
- REPALIASMBR

OUTALTNAMES

Displays alias names for members in a report.

May be used in conjunction with OUTMBRNAME to switch between member names and alias names in report rows.

The member name, not the alias name, is the default for reporting.

Syntax

```
{ OUTALTNAMES }
```

Notes

- OUTALTNAMES cannot be used on duplicate member outlines. See REPALIAS.
- OUTALTNAMES is a setting command.
- The OUTALTMBR or OUTMBRALT commands may be used to redefine the alternate names definition.

Example

The following example is based on Sample Basic.

```
{WIDTH 15}
//{OUTALTNAMES} If used (commented out), displays alias names for column
headers
<PAGE (Measures)
Sales
<COL (Year, Market, Scenario)
```

```
Jan Feb Mar
 East Actual
<ROW(Measures)
{OUTALTNAMES}
// These members display with aliases.
<IDESCENDANTS "100"
{OUTMBRNAMES}
// These members display their member names as defined in the outline.
<IDESCENDANTS "200"
{OUTALTNAMES}
// Switches back to alias names, as defined in the current alias table.
<IDESCENDANTS "400"
!
```

This example produces the following report:

```
                          Sales East Actual
                     Jan             Feb             Mar
================ ============== ============== ==============
Cola                   1,812          1,754          1,805
Diet Cola                200            206            214
Caffeine Free Cola        93            101            107
  Colas                2,105          2,061          2,126
200-10                   647            668            672
200-20                   310            310            312
200-30               #Missing       #Missing       #Missing
200-40                   896            988            923
  200                  1,853          1,966          1,907
Grape                    562            560            560
Orange                   219            243            213
Strawberry               432            469            477
  Fruit Soda           1,213          1,272          1,250
```

Related Topics

- OUTALT
- OUTALTMBR
- OUTMBRALT
- OUTMBRNAMES

OUTALTSELECT

Selects an alias table in a report script.

The table remains in effect until another **<**OUTALTSELECT command executes. This lets you use different alias tables for different dimensions in a report script.

Syntax

```
<OUTALTSELECT AliasTableName
```

Parameters

AliasTableName
The name of the selected alias table associated with the database outline.

Notes

OUTALTSELECT can be used on unique member outlines or duplicate member outlines.

Example

The following example is based on Sample Basic, using two different alias tables: Long Names and Default.

```
<PAGE("Scenario")
<COLUMN("Year", "Market")
<ROW("Measures", "Product")
<LINK(  <CHILDREN("Qtr4"))
<LINK(  <CHILDREN("South"))
<OUTALTSELECT "Long Names"
{OUTALTNAMES}"100-10"
"100-20"
"100-30"
<OUTALTSELECT Default
{OUTALTNAMES}
"200-10"
"200-20"
"200-30"
!
```

Related Topics

- REPALIAS
- REPALIASMBR
- REPMBR
- REPMBRALIAS
- OUTALTMBR
- OUTALTNAMES
- OUTMBRALT
- OUTMBRNAMES

OUTFORMATTEDMISSING

Formats missing values in reports instead of the missing alias. By default, missing values are not formatted. Only cells with non-numeric type are formatted.

Syntax

```
{ OUTFORMATTEDMISSING }
```

Related Topics

- WITHATTR

OUTFORMATTEDVALUES

Generates formatted cell values in the report instead of cell values. By default cell values are reported. Cells with missing values will not be formatted.

Syntax

```
{ OUTFORMATTEDVALUES }
```

Related Topics

- WITHATTR

OUTMBRALT

Sets the output name to the database outline member name followed by the outline alias, as defined in the current alias table.

The member name and alias are separated by a single space.

Syntax

```
<OUTMBRALT
```

Notes

- OUTMBRALT cannot be used on duplicate member outlines. See REPMBRALIAS.
- You must precede the OUTMBRALT command with OUTALTNAMES to display the alias, followed by the member name (rather than the member name alone).
- OUTMBRALT cannot be used on duplicate member name outlines.
- REPMBRALIAS can be used on both unique and duplicate member name outlines. REPMBRALIAS supercedes OUTMBRALT.

Example

The following example is based on Sample Basic.

```
<PAGE (Product, Measures)
<COLUMN (Scenario, Year)
{OUTALTNAMES}
<OUTMBRALT
Actual
<CHILDREN Qtr1
<ROW (Market)
<IDESCENDANTS "300"
     !
```

This example produces the following report:

```
                      300-10 Measures Actual
                        Jan      Feb      Mar
                     ======== ======== ========
Market                  800      864      880

             300-20 Vanilla Cream Measures Actual
                       Jan      Feb      Mar
                     ======== ======== ========
Market                  220      231      239

               300-30 Diet Cream Measures Actual
                       Jan      Feb      Mar
                  ======== ======== ========
Market                  897      902      896

                 300 Cream Soda Measures Actual
                       Jan      Feb      Mar
                  ======== ======== ========
Market                1,917    1,997    2,015
```

Related Topics

- OUTALT
- OUTALTMBR
- OUTALTNAMES
- OUTMBRNAMES
- REPMBRALIAS

OUTMBRNAMES

Reverts to the default member name display after the OUTALTNAMES command has been used to display alternate names.

The member name is the default for reporting.

Syntax

```
{ OUTMBRNAMES }
```

Notes

OUTMBRNAMES cannot be used on duplicate member outlines. See REPMBR.

Related Topics

- OUTALT
- OUTALTMBR
- OUTALTNAMES
- OUTMBRALT

OUTMEANINGLESS

Displays #ME in reports for cells that are meaningless because no base member-attribute member combination exists.

Syntax

```
{ OUTMEANINGLESS }
```

Related Topics

- WITHATTR

OUTPUT

Resumes output, reversing the action of SUPOUTPUT.

Syntax

```
{ OUTPUT }
```

Notes

This command causes Report Writer to resume output with the member specifications in effect when the OUTPUT command was issued. It will not "remember" where it was when the SUPOUTPUT command was issued. Further, any formatting commands that were issued in the interim will also be in effect. Thus, you can use the SUPOUTPUT command to suppress all output from a portion of the report script.

Related Topics

- SUPOUTPUT

OUTPUTMEMBERKEY

Displays a member identifier (in addition to the member or alias name) for any duplicate member names. OUTPUTMEMBERKEY applies to duplicate member outlines only.

Syntax

```
<OUTPUTMEMBERKEY
```

Notes

- OUTPUTMEMBERKEY is primarily for use in programing applications.
- OUTPUTMEMBERKEY cannot be used in combination with the existing commands OUTMBRALT, OUTALTMBR, OUTALT, OUTALTNAMES, OR OUTMBRNAMES.
- SORTMBRNAMES does not sort by member identifier.

Related Topics

- REPQUALMBR
- REPMBR

- REPALIAS
- REPMBRALIAS
- REPALIASMBR

PAGE

Defines which dimensions are displayed as page members in the final report.

This command specifies the dimension or dimensions to be used such that each member or combination of members of these dimensions is an attribute of all data cells on a page.

Page members are displayed at the top of the report above the column members. Any member in the report specification from the same dimension as a member in the PAGE command is a page member. Only one member at a time from each page dimension is displayed in the page heading at the top of each page.

Each time any member from one of the dimensions in the page heading changes, it creates a new page heading. The order of the dimensions in the PAGE command determines the order in which members occur in the page heading. The member from the first dimension is displayed first, followed by the second and so on.

On any single report page, the current page members are representative of (are attributes of) all the data cells on the page.

Syntax

```
<PAGE ( dimList )
```

Parameters

dimList
Dimension name or a comma-delimited list of dimensions.

Notes

- If dimension names contain spaces or consist of numbers, they must be enclosed in double quotes.
- Essbase automatically generates new page headings when dimensions change. Essbase does not, however, automatically generate page breaks. To specify page breaks when dimensions change, use the PAGEONDIMENSION format command.
- When more than one dimension is specified, the last dimension in the list changes most frequently. For example, <PAGE (Measures, Market) lists all values for Sales East (New York, Massachusetts, Florida, etc.), then lists all values for Sales West. After all Markets have been cycled, the next Measure will replace Sales, and then Markets will cycle through again.

Example

```
<PAGE (Measures, Market)
```

Creates a report based on member combinations of dimensions Measures and Market. The first page of the report lists all values for Sales, East; the next page lists all values for Sales, West; When all children of Market have been extracted, the report continues with Cost of Goods Sold, East followed by Cost of Goods Sold, West, and so on.

Related Topics

- COLUMN
- ROW

PAGEHEADING

Displays the page heading before the next data-output row.

Otherwise, a new page heading occurs only if the page or column members change, a page is generated (for example, page length is exceeded or a NEWPAGE command is issued), or a page header has not been done for this page and the first output row on the page is ready to print.

If PAGEHEADING is specified between the STARTHEADING and ENDHEADING commands, however, the page heading is displayed with the heading and not immediately. This command also permanently nullifies the effect of a previously issued SUPPAGEHEADING command.

The page heading is the default heading, which contains the current page members.

Syntax

```
{ PAGEHEADING }
```

Notes

- The TEXT and SUPPRESSHEADING command can be used to customize page heading text and placement.
- By default, page and column headers (together called the HEADING) are turned on. This means they are displayed prior to the first actual output row in a report, and are reset to display again whenever:
  1. A new page is generated.
  2. Any member in the page or column dimensions changes.
  3. A specific COLHEADING, PAGEHEADING, or IMMHEADING dictates a new heading. Once they are reset to display, they are output just prior to the new non-suppressed output row.
- IMMHEADING produces a new page and column heading immediately, without waiting for the next non-suppressed output line.

Example

The following report script is designed for the Demo Basic cube, available in the gallery. The PAGEHEADING command inserts the page heading members in the report for a second time.

```
<PAGE (Market, Accounts, Scenario)
Chicago Sales Actual
      <COLUMN (Year)
      <ICHILDREN Year
<ROW (Product)
Television
VCR
{ SKIP PAGEHEADING SKIP }
Compact_Disc
```

```
Stereo
     !
```

This example produces the following report:

```
                          Chicago Sales Actual

                  Qtr1     Qtr2     Qtr3     Qtr4     Year
               ======== ======== ======== ======== ========

Television        4,410    4,001    4,934    6,261   19,606
VCR               3,879    3,579    4,276    4,877   16,611


                          Chicago Sales Actual

Compact_Disc      3,150    3,021    3,032    3,974   13,177
Stereo            2,591    2,476    2,567    3,035   10,669
```

Related Topics

- COLHEADING
- HEADING
- PAGE
- SUPALL
- SUPCOLHEADING
- SUPHEADING
- SUPPAGEHEADING
- TEXT

PAGELENGTH

Sets the maximum number of lines for one page in the report.

Syntax

```
{ PAGELENGTH [ lines ] }
```

Parameters

lines
Optional total number of output lines for the size of paper you are using. Because the Report Writer does not recognize any of the font characteristics of the output report, it operates based on lines rather than inches.

Notes

Default Value

The defaults are FEEDON and a PAGELENGTH of 66 lines, which normally translates to an 11-inch-long page. This value is assumed if *lines* is not given.

This command sets the maximum number of lines for one page in the report. After displaying the number of lines, a page break is inserted, followed by the heading. The page break is not inserted if a SUPFEED command has been used. The heading is displayed at the start of the new page unless SUPHEADING has been used.

If you are using legal size paper, the value should be 84 lines. If you are using A4 paper, the value should be 70 lines.

Example

{ PAGELENGTH 50 } sets the maximum number of lines for one page to 50.

Related Topics

- LMARGIN
- WIDTH

PAGEONDIMENSION

Performs a page break whenever a member from the same dimension as the specified member changes from one line in the report to the next.

Syntax

```
{ PAGEONDIMENSION mbrName }
```

Parameters

mbrName
Single member. If any member of the same dimension increments, a new page is started.

Notes

This command performs a page break whenever a member from the same dimension as the member in the command changes from one line in the report to the next.

With the ROW command, you can display members from several dimensions in columns on the side of the report. At least one member changes from one of these dimensions for each row of the report.

PAGEONDIMENSION causes a new page to begin when the member from the selected dimension changes. A single report can have several PAGEONDIMENSION commands to page on different dimensions which change.

When combined with UNAMEONDIMENSION and SKIPONDIMENSION, UNAMEONDIMENSION is processed first followed by SKIPONDIMENSION and PAGEONDIMENSION in order.

Example

The command { PAGEONDIMENSION Year } inserts a page break before displaying the members Qtr2, Qtr3, and Qtr4 in the following report below. On each new page, the heading members Chicago, Sales and Actual are displayed at the top of the page.

```
<PAGE (Market, Accounts)
Chicago Sales Actual

      <COLUMN (Scenario)
```

```
      <CHILDREN Year

<ROW (Year, Product)
{ PAGEONDIMENSION Year }
<ICHILDREN Audio
     !
```

This example produces the following report:

```
     Chicago Sales Actual

Qtr1    Stereo      2,591
      Compact_Disc  3,150
      Audio         5,741


     Chicago Sales Actual

Qtr2    Stereo      2,476
      Compact_Disc  3,021
      Audio         5,497

      Chicago Sales Actual

Qtr3    Stereo      2,567
      Compact_Disc  3,032
      Audio         5,599

      Chicago Sales Actual

Qtr4    Stereo      3,035
      Compact_Disc  3,974
      Audio         7,009
```

Related Topics

- NOPAGEONDIMENSION
- NOSKIPONDIMENSION
- SKIPONDIMENSION

PARENT

Adds the parent of the member to the report.

Syntax

```
<PARENT mbrName
```

Parameters

mbrName
Single member, which must not be the dimension (top) member.

Example

```
<PARENT Jan
```

adds Qtr1 to the report.

Related Topics

- ANCESTORS
- CHILDREN
- DESCENDANTS

PERSPECTIVE

Sets the perspective, a tuple or REALITY, for a varying attribute dimension for a report.

Syntax

```
<PERSPECTIVE(tuple, attrDim)
```

Parameters

tuple
`(m1, m2, ..., mX) | REALITY`
This is the perspective tuple to be applied for the given attribute dimension.

- `(m1, m2, ..., mN)`

  Level-0 members from one or more independent dimensions for `attrDim` may be part of the input tuple.

- `REALITY`

  The `REALITY` keyword indicates using independent members from the current query-calculation context. When explicit perspectives are missing for an attribute dimension, the default usage for the perspective is `REALITY`.

attrdim
The varying attribute dimension to which the perspective applies. May be any member from attribute dimension hierarchy.

Notes

- Without the use of the perspective command, the default perspective will be used.
- The perspective specified for an attribute dimension influences the attribute calculations in the query. The following Report Writer commands involving attributes honor the prevailing perspective:
  - `<Attribute attMbrName`
  - `<WithAttr(dimName,"operator",value)`
- Only the first the perspective command in a report is honored. Any other perspective commands are ignored.

Example

```
<PERSPECTIVE((Jan), Ounces)


<PERSPECTIVE((Jan, California), Ounces)
```

Related Topics

- WITHATTREX
- ATTRIBUTEVA

PRINTROW

Displays the calculated *rowName* with its current values.

Syntax

```
{ PRINTROW "rowName" }
```

Parameters

"rowName"
Character string, enclosed by quotation marks, which designates a previously declared calculated row. When the command is issued, the designated row is printed immediately in the report.

Example

See the examples for the CALCULATE COLUMN command.

Related Topics

- CALCULATE COLUMN
- CLEARROWCALC
- CLEARALLROWCALC
- OFFCOLCALCS
- OFFROWCALCS
- ONCOLCALCS
- ONROWCALCS
- REMOVECOLCALCS
- RENAME
- SAVEANDOUTPUT
- SAVEROW
- SETROWOP

PYRAMIDHEADERS

Displays column members in centered, pyramid-shaped levels above columns (the default style used by symmetric reports).

Syntax

```
{PYRAMIDHEADERS}
```

Notes

This command displays column members in centered, pyramid-shaped levels over the columns in the report. Pyramid display of column members is the default method for displaying column members.

Pyramid headers cannot be used with asymmetric reports unless the report is extracted as a symmetric report and reordered or truncated to make it asymmetric.

Default Value

Default for symmetric reports. Also resets the default column display following a BLOCKHEADERS command.

Example

The following example is based on Sample Basic.

```
<PAGE (Measures, Market)
Sales
{WIDTH 7}
{ BLOCKHEADERS }
     <COLUMN (Scenario, Year)
     Actual Budget
     Jan Feb Mar
<ROW (Market)
<CHILD "200"
     !
{PYRAMIDHEADERS}
<CHILD "300"
     !
```

This example produces the following report:

```
                              Sales Market
                Actual Actual Actual Budget Budget Budget
                   Jan    Feb    Mar    Jan    Feb    Mar
                ====== ====== ====== ====== ====== ======
200-10           3,220  3,348  3,326  3,230  3,370  3,370
200-20           3,122  3,161  3,203  3,090  3,120  3,190
200-30           1,478  1,463  1,499  1,310  1,290  1,330
200-40             896    988    923    870    950    890

                              Sales Market
                      Actual                Budget
```

```
                  Jan     Feb     Mar     Jan     Feb     Mar
                ======  ======  ======  ======  ======  ======
300-10          3,517   3,613   3,650   2,950   3,050   3,080
300-20          1,397   1,417   1,434   1,140   1,160   1,170
300-30          2,960   3,016   2,993   2,560   2,590   2,580
```

Related Topics

- BLOCKHEADERS

QUOTEMBRNAMES

Displays all the member names within quotation marks in the report script output. Note that when the report script is run through Smart View or another grid client, the members are not returned within quotation marks.

Syntax

```
<QUOTEMBRNAMES
```

Notes

QUOTEMBRNAMES can occur anywhere in a report script. This command is useful when using the Report Writer to export data intended for reloading a cube without the use of a data load rule file.

> **Note:**
>
> When used in a report script that also uses the RENAME report command, names substituted using the RENAME command are not enclosed in quotation marks.

Example

The following report script is designed for the Sample Basic cube, available in the gallery.

```
<PAGE (Scenario)
<COLUMN (Year)
<ROW (Product, Market, Measures)
<QUOTEMBRNAMES
{ROWREPEAT}

<ICHILDREN Year
<DIMBOTTOM Product
<DIMBOTTOM Market
<CHILDREN Profit
 !
```

which produces the following report (truncated in this example):

```
                                                    "Scenario"
```

```
                                                    "Qtr1"   "Qtr2"   "Qtr3"
"Qtr4"   "Year"
                                                  ======== ======== ========

========= ========

"100-10"   "New York"       "Margin"            1,199    1,416    1,568
1,184    5,367
"100-10"   "New York"       "Total Expenses"      433      488      518
430    1,869
"100-10"   "Massachusetts"  "Margin"            1,237    1,533    1,741
1,224    5,735
"100-10"   "Massachusetts"  "Total Expenses"      164      155      149
162      630
...
```

REMOVECOLCALCS

Removes all column calculation definitions from the report.

Syntax

```
{ REMOVECOLCALCS }
```

Notes

This command removes all column calculation definitions from the report. The data values for any calculated columns are no longer calculated or displayed. This may be used if the limit of declared column calcs (50) is a problem. If the previous column calcs are no longer needed, they can be freed, creating room for up to 50 more.

Related Topics

- CALCULATE COLUMN
- CLEARROWCALC
- CLEARALLROWCALC
- OFFCOLCALCS
- OFFROWCALCS
- ONCOLCALCS
- ONROWCALCS
- PRINTROW
- SETROWOP

RENAME

Renames a member within the report.

Syntax

```
{ RENAME "newMbrName" } mbrName
```

Parameters

"newMbrName"
Valid member name, enclosed in quotation marks, to be used as the replacement name.

mbrName
Name of the member that you want to rename temporarily.

Notes

This command renames a member within the report. This is a way of creating a temporary alias that applies to a single member, and it applies only within the report. Note that when you assign a temporary name to a member name, you do not have to state the member name again before or on the following line after the RENAME command. However, if you do state the member name later in the report, but not immediately on the next line after the RENAME command, the temporary name will be reset to its original member name.

Example

```
{RENAME "Video"} Visual
```

renames the Visual member to "Video" in the report.

REPALIAS

Displays alias names for members of the dimension specified.

If no alias exists for a member, the member name only is displayed. The current alias table is used unless OUTALTSELECT is used to specify an alternative alias table.

Syntax

```
<REPALIAS dimensionname
```

Notes

- <REPALIAS "" specifies the command for all dimensions.
- REPALIAS can be used on unique member outlines or duplicate member outlines.
- Some formatting commands (for example, RENAME) do not work with REPALIAS.
- REPALIAS cannot be used in combination with the existing commands OUTMBRALT, OUTALTMBR, OUTALT, OUTALTNAMES, OR OUTMBRNAMES.

Example

The following example is based on Sample Basic.

```
{WIDTH 15}
<PAGE (Measures)
Sales
<COL (Year, Market, Scenario)
Jan Feb Mar
 East Actual
<ROW(Product)
```

```
<IDESCENDANTS "100"
<IDESCENDANTS "200"
<IDESCENDANTS "400"
<REPALIAS product
// Displays aliases for all Product members
!
```

This example produces the following report:

```
                              Sales East Actual

                          Jan             Feb             Mar
                ============== ============== ==============

Cola                    1,812          1,754          1,805
Diet Cola                 200            206            214
Caffeine Free Cola         93            101            107
  Colas                 2,105          2,061          2,126
Old Fashioned             647            668            672
Diet Root Beer            310            310            312
Sasparilla            #Missing       #Missing       #Missing
Birch Beer                896            988            923
  Root Beer             1,853          1,966          1,907
Grape                     562            560            560
Orange                    219            243            213
Strawberry                432            469            477
  Fruit Soda            1,213          1,272          1,250
```

Related Topics

- OUTALTSELECT
- OUTPUTMEMBERKEY
- REPALIASMBR
- REPMBR
- REPMBRALIAS
- REPQUALMBR

REPALIASMBR

Displays alias names followed by member names for members of the dimension specified in the report output.

The alias and member name are separated by a single space. If no alias exists for a member, the member name only is displayed. The current alias table is used unless OUTALTSELECT is used to specify an alternative alias table.

Syntax

```
<REPALIASMBR dimensionname
```

Notes

- <REPALIASMBR "" specifies the command for all dimensions.
- REPALIASMBR can be used on unique member outlines or duplicate member outlines.
- Some formatting commands (for example, RENAME) do not work with REPALIASMBR.
- REPALIASMBR cannot be used in combination with the existing commands OUTMBRALT, OUTALTMBR, OUTALT, OUTALTNAMES, OR OUTMBRNAMES.

Example

The following example is based on Sample Basic.

```
<PAGE (Product, Measures)
<COLUMN (Scenario, Year)
<REPALIASMBR Product
Actual
<CHILDREN Qtr1
<ROW (Market)
<IDESCENDANTS "300"
     !
```

This example produces the following report:

```
   Dark Cream 300-10 Measures Actual

                      Jan      Feb      Mar
                 ======== ======== ========

Market                800      864      880

            Vanilla Cream 300-20 Measures Actual

                      Jan      Feb      Mar
                 ======== ======== ========

Market                220      231      239

             Diet Cream 300-30 Measures Actual

                      Jan      Feb      Mar
                 ======== ======== ========

Market                897      902      896

               Cream Soda 300 Measures Actual

                      Jan      Feb      Mar
                 ======== ======== ========

Market              1,917    1,997    2,015
```

Related Topics

- OUTALTSELECT
- OUTPUTMEMBERKEY
- REPALIAS
- REPMBR
- REPMBRALIAS
- REPQUALMBR

REPMBR

Displays member names only for members of the dimension specified.

Used with the commands REPALIAS, REPMBRALIAS, and REPALIASMBR.

Syntax

```
<REPMBR dimensionname
```

Notes

- <REPMBR "" specifies the command for all dimensions.
- REPMBR can be used on unique member outlines or duplicate member outlines.
- Some formatting commands (for example, RENAME) do not work with REPMBR.
- REPMBR cannot be used in combination with the existing commands OUTMBRALT, OUTALTMBR, OUTALT, OUTALTNAMES, OR OUTMBRNAMES.

Example

The following example is based on Sample Basic.

```
<PAGE (Product, Measures)
<COLUMN (Scenario, Year)
//Displays aliases for all dimensions except the Product dimension. Displays
member names for the Product dimension.
<REPALIAS ""
<REPMBR Product
Actual
<CHILDREN Qtr1
<ROW (Market)
<IDESCENDANTS "300"
     !
```

This example produces the following report:

```
  300-10 Measures Actual

                      Jan      Feb      Mar
                 ======== ======== ========

Market               800      864      880
```

```
                    300-20 Measures Actual

                        Jan      Feb      Mar
                    ======== ======== ========

Market                  220      231      239

                    300-30 Measures Actual

                        Jan      Feb      Mar
                    ======== ======== ========

Market                  897      902      896

                     300 Measures Actual

                        Jan      Feb      Mar
                    ======== ======== ========

Market                1,917    1,997    2,015
```

Related Topics

- OUTPUTMEMBERKEY
- REPALIAS
- REPALIASMBR
- REPMBRALIAS
- REPQUALMBR

REPMBRALIAS

Displays member names followed by aliases for members of the dimension specified. The member name and alias are separated by a single space. If no alias exists for a member, the member name only is displayed. The current alias table is used unless OUTALTSELECT is used to specify an alternative alias table.

Syntax

```
<REPMBRALIAS dimensionname
```

Notes

- <REPMBRALIAS "" specifies the command for all dimensions.
- REPMBRALIAS can be used on unique member outlines or duplicate member outlines.
- Some formatting commands (for example, RENAME) do not work with REPMBRALIAS.
- REPMBRALIAS cannot be used in combination with the existing commands OUTMBRALT, OUTALTMBR, OUTALT, OUTALTNAMES, OR OUTMBRNAMES.

Example

The following example is based on Sample Basic.

```
<PAGE (Product, Measures)
<COLUMN (Scenario, Year)
<REPMBRALIAS Product
Actual
<CHILDREN Qtr1
<ROW (Market)
<IDESCENDANTS "300"
     !
```

This example produces the following report:

```
             300-10 Dark Cream Measures Actual

                     Jan      Feb      Mar
                ======== ======== ========

Market               800      864      880

            300-20 Vanilla Cream Measures Actual

                     Jan      Feb      Mar
                ======== ======== ========

Market               220      231      239

             300-30 Diet Cream Measures Actual

                     Jan      Feb      Mar
                ======== ======== ========

Market               897      902      896

               300 Cream Soda Measures Actual

                     Jan      Feb      Mar
                ======== ======== ========

Market             1,917    1,997    2,015
```

Related Topics

- OUTALTSELECT
- OUTPUTMEMBERKEY
- REPALIAS
- REPALIASMBR
- REPMBR
- REPQUALMBR

REPQUALMBR

Displays member names for any unique member names and a system generated identifier (for example, a qualified name) for any duplicate member names for the dimension specified. REPQUALMBR applies to duplicate member outlines only.

Syntax

```
<REPQUALMBR dimensionname
```

Notes

- <REPQUALMBR "" specifies the command for all dimensions.
- Some formatting commands (for example, RENAME) do not work with REPQUALMBR.
- REPQUALMBR cannot be used in combination with the existing commands OUTMBRALT, OUTALTMBR, OUTALT, OUTALTNAMES, OR OUTMBRNAMES.

Related Topics

- OUTPUTMEMBERKEY
- REPALIAS
- REPALIASMBR
- REPMBR
- REPMBRALIAS

RESTRICT

The RESTRICT command specifies the conditions that the row must satisfy before it becomes part of a result set.

Syntax

```
<RESTRICT (<column | value> <operator> <column |
value>{<logicalOperator><column | value> <operator> <column | value>})
```

Parameters

<column >
@DATACOLUMN (<*colNumber*>) | @DATACOLUMN (<*colNumber*>)
where <*colNumber*> is the target column number; must be between 1 and the maximum number of columns in the report.

<value>
Cell data type (real number) | #MISSING

<operator>

- >, >= greater than, greater or equal
- <, <= less than, less than or equal

- = equal
- !=, <> not equal

<logicalOperator>
Report Writer processes logical operations from left to right without exception. Parentheses are not supported. The supported logical operators are AND and OR.

Notes

Restrictions set by this command are processed from left to right.

You can use only one RESTRICT command per report, with a maximum of nine operators included in the command. RESTRICT persists to the end of the report script unless overwritten. You can use RESTRICT, TOP, BOTTOM, and ORDERBY in the same report script, but you can use each command only once per report. If you repeat the same command in a second report in the same report script, the second command overwrites the first. Place global script formatting commands, for example, SAVEROW, before a PAGE, COLUMN command or associated member (for example, <ICHILDREN or <IDESCENDANTS).

The RESTRICT command can appear anywhere in a script. If sorting commands, including TOP, BOTTOM, or ORDERBY occur in the same report, the order of execution is:

1. Any sorting command that sorts on member names (for example <SORTDESC or <SORTASC)
2. RESTRICT
3. TOP and BOTTOM
4. ORDERBY

This order of execution applies irrespective of the order in which the commands appear in the report script.

For an example that uses TOP, BOTTOM, ORDERBY, and RESTRICT together, see the entry for the BOTTOM command.

You can use configurable variables to specify the size of the internal buffers used for storing and sorting the extracted data. The following settings affect the way the RESTRICT, TOP, and BOTTOM commands work:

- Retrieval Buffer Size (a database setting)
- Retrieval Sort Buffer Size (a database setting)
-

Example

```
{ StartHeading
  SupPageHeading
  Skip
  Text C "Annual Report" 70 "*PageString"
  Skip
  Endheading }

// Display the rows where the value of column 3 is greater than 1,300
<RESTRICT (@DATACOLUMN(3) > +1300 )

// Page and column dimensions
<Page   (Accounts, Scenario)
```

```
<Column (Scenario, Year)

// Scenario members
Actual Budget Scenario

// Row dimensions
<Row (Market, Product)

// Market members
<Ichildren Market

// Product members
<Idescendants Product

!
// End report
```

Which produces the following report based on the Demo Basic sample database:

```
   Annual Report                Page: 1

                                    Actual   Budget Scenario
                                  ======== ======== ========

East             Compact_Disc       13,612   13,616   13,612
                   Audio            13,438   14,551   13,438
                 Television         11,911   14,780   11,911
                 VCR                15,506   16,772   15,506
                 Camera              5,721    7,079    5,721
                   Visual           33,138   38,631   33,138
                     Product        46,576   53,182   46,576
West             Compact_Disc       21,568   20,935   21,568
                   Audio            22,488   22,308   22,488
                 Television         10,688   13,535   10,688
                 VCR                19,706   17,782   19,706
                 Camera              9,957   12,397    9,957
                   Visual           40,351   43,714   40,351
                     Product        62,839   66,022   62,839
South            Television          5,278    9,395    5,278
                 VCR                13,994   15,810   13,994
                 Camera              5,293    7,220    5,293
                   Visual           24,565   32,425   24,565
                     Product        24,565   32,425   24,565
  Market         Compact_Disc       35,180   34,551   35,180
                   Audio            35,926   36,859   35,926
                 Television         27,877   37,710   27,877
                 VCR                49,206   50,364   49,206
                 Camera             20,971   26,696   20,971
                   Visual           98,054  114,770   98,054
                     Product       133,980  151,629  133,980
```

Related Topics

- TOP

- BOTTOM
- ORDERBY

ROW

Determines the row dimensions for a report whose member names appear in the data rows of the report.

The member(s) in the command determine which dimensions from the Database Outline are displayed in the rows.

dimList is a list of members or dimension members that specifies the order, from left to right, in which the row headers are listed unless subsequently moved by ORDER or NAMESCOL. Each dimension may be represented only once in *dimList*.

Syntax

```
<ROW ( dimList )
```

Parameters

dimList
Dimension name or a comma-delimited list of dimensions.

Notes

- If dimension names contain spaces or consist of numbers, they must be enclosed in double quotes.
- When more than one dimension is specified the first dimension in the list appears in the leftmost row Name column, the next dimension in the list appears nested to the right of the first, and so on.
- By default attribute calculation dimension members (for example, SUM, AVG) are displayed as columns. To display them in rows, you must include them in the ROW command.

Example

```
<ROW (Product)
```

creates a report with each member of Product as a row in the report.

Related Topics

- COLUMN
- PAGE

ROWREPEAT

Displays all applicable row members on each row of the report even if a member describing a row is the same as in the previous row.

Syntax

```
{ ROWREPEAT }
```

Notes

This command returns the report to displaying members that change from one line to the next.

Default Value

Default is NOROWREPEAT.

Example

The following example is based on Demo Basic.

The command { ROWREPEAT } causes the row member names Qtr1 through Qtr4 to repeat for each line showing Compact_Disc in the report where the duplications would normally be suppressed.

```
<PAGE Market, Accounts)
Chicago Sales

      <COLUMN Scenario)
      Actual Budget

<ROW Year, Product)

{ROWREPEAT}

<CHILDREN Year
<CHILDREN Audio
     !
```

This example produces the following report:

```
                                    Chicago Sales

                                  Actual   Budget
                                ======== ========
Qtr1            Stereo             2,591    2,800
Qtr1            Compact_Disc       3,150    3,050
Qtr2            Stereo             2,476    2,700
Qtr2            Compact_Disc       3,021    3,050
Qtr3            Stereo             2,567    2,750
Qtr3            Compact_Disc       3,032    3,050
Qtr4            Stereo             3,035    3,300
Qtr4            Compact_Disc       3,974    3,950
```

Related Topics

- NOROWREPEAT
- ROW

SAVEANDOUTPUT

Adds *rowMbr* to the report and creates a new calculated row whose default name is *rowMbr*, but which may be renamed with an optional name, *rowCalcName*, enclosed in quotation marks.

The command automatically stores the data associated with *rowMbr*, and this data can be referenced by CALC ROW, CALC COLUMN, PRINTROW, or any other command that can reference a calculated row.

When this command is used, the calculation operator for that command is set to OFF, so that its contents are not be affected unless the user explicitly turns the operator back on.

SAVEANDOUTPUT both captures data and outputs the result, whereas SAVEROW captures the output but suppress it.

Syntax

```
{ SAVEANDOUTPUT [ "rowCalcName" ] } rowMbr !
```

Parameters

"rowCalcName"
Optional. Name, enclosed by quotation marks, for the calculated data row created by the SAVEROW command.
rowCalcName can be multi-part, separated by a tilde (~), as in the CALCULATE ROW and CALCULATE COLUMN syntax.

rowMbr
Row member that determines the row name for the calculated data row.

Notes

A member and a calculated row can have the same name. Report Writer considers them separate entities even though they have the same name.

Example

The following example is based on Demo Basic.

```
{ TEXT 18 "Expenses as % of Sales for January" }

Jan Boston Audio

      Actual Budget

{ SAVEANDOUTPUT } Sales !

{ CALCULATE COLUMN " Actual%" = 1 % "Sales" 1
 CALCULATE COLUMN "Budget%" = 2 % "Sales" 2 }

COGS  Misc
Payroll
Marketing
```

```
!
```

This example produces the following report:

```
            Expenses as % of Sales for  January

                 Jan Boston Audio
                   Actual   Budget
                 ======== ========
Sales               1,985    2,150

                          Jan Boston Audio
                   Actual   Budget  Actual%  Budget%
                 ======== ======== ======== ========
Cost_of_Goods_Sold    941    1,007       47       47
Miscellaneous           4        0        0        0
Payroll               542      530       27       25
Marketing             134      130        7        6
```

Related Topics

- CALCULATE COLUMN
- CALCULATE ROW
- CLEARROWCALC
- CLEARALLROWCALC
- OFFCOLCALCS
- OFFROWCALCS
- ONCOLCALCS
- ONROWCALCS
- OUTPUT
- PRINTROW
- REMOVECOLCALCS
- SAVEANDOUTPUT
- SAVEROW
- SUPOUTPUT

SAVEROW

Creates a new calculated row whose default name is *rowMbr*, but which may be renamed with an optional name enclosed in quotation marks.

The command automatically stores the data associated with *rowMbr*, and this data can be referenced by any CALC ROW, CALC COLUMN, PRINTROW command, or any other that can reference a calculated row.

When the command is used, the calculation operator for that command is set to OFF, so that its contents are not affected unless the user explicitly turns the operator back on. SAVEROW captures the data, but suppresses its output.

Syntax

```
{ SAVEROW ["newRowCalcName"] } rowMbr !
```

Parameters

newRowCalcName
Optional. Name, enclosed in quotation marks, for the data row created by the SAVEROW command. The name can be multi-part, separated by a tilde (~), as in the CALCULATE ROW and CALCULATE COLUMN syntax.

rowMbr
Default row member used to determine the row name for the calculated data row. *rowMbr* is the next member encountered after the { SAVEROW } command, so other intervening { } format commands or non-member-selecting < commands are allowed and do not affect which member is saved.

Notes

There is no conflict with a member and a calculated row having the same name. They are separate entities even though they have the same name.

Example

The following example is based on Demo Basic.

```
{TEXT 18 "Expenses as % of Sales for January"}
Jan Boston Audio

      Actual Budget

{SAVEROW} Sales !
{CALCULATE COLUMN " Actual%" = 1 % "Sales" 1
 CALCULATE COLUMN "Budget%" = 2 % "Sales" 2}
COGS  Misc
Payroll
Marketing
Sales
     !
```

Which produces the following report:

```
                  Expenses as % of Sales for January

                          Jan Boston Audio
                  Actual   Budget  Actual%  Budget%
                ======== ======== ======== ========
Cost_of_Goods_Sold    941    1,007       47       47
Miscellaneous           4        0        0        0
Payroll               542      530       27       25
```

```
Marketing             134      130        7        6
Sales               1,985    2,150      100      100
```

Related Topics

- SAVEANDOUTPUT

SCALE

Scales the data in the report by multiplying it by a numeric value.

Syntax

```
{ SCALE factor [ columnList ] }
```

Parameters

factor
Numeric value by which all output values are multiplied. The result is a scaled value.

columnList
Optional. List of column numbers that this command affects.

Notes

This command affects only the columns specified in the command or all columns if none are specified. Stored data is not affected by this command.

Example

The following report script is designed for the Demo Basic cube, available in the gallery. The command `{SCALE .01}` multiplies the data values in the second report by .01.

```
<PAGE (Market, Accounts, Scenario)
Chicago Sales Actual
      <COLUMN (Year)
      <CHILDREN  Year
<ROW (Product)
<CHILDREN Audio
     !

{SCALE 2}
Chicago Sales Actual
      <CHILDREN Year
<CHILDREN Audio
     !
```

This example produces the following report:

```
                    Chicago Sales Actual

                  Qtr1   Qtr2   Qtr3   Qtr4
               ======= ====== ====== ======
Stereo           2,591  2,476  2,567  3,035
```

```
Compact_Disc    3,150  3,021  3,032  3,974

                    Chicago Sales Actual

                 Qtr1   Qtr2   Qtr3   Qtr4
               ======= ====== ====== ======
Stereo           5,182  4,952  5,134  6,070
Compact_Disc     6,300  6,042  6,064  7,948
```

Related Topics

- BRACKETS
- COMMAS
- DECIMAL
- SUPBRACKETS
- SUPCOMMAS

SETCENTER

Sets a new centerline position on the page.

Syntax

```
{ SETCENTER charPosition }
```

Parameters

charPosition
Integer representing a character position on your page. Character position is counted from the left edge of the page and is not affected by the left margin setting.

Notes

This command sets a new centerline position on the page. Under normal circumstances, the center of the page is calculated based on the default page width and the left margin position until column members have been encountered, after which it defaults to the center of the data column area.

The SETCENTER command allows you to issue an arbitrary centerline position, which is then used for all centered text, including page headers. This can be helpful to center text before all the members defining the columns (and thus, the page width). It can also be used to reset the center in cases where the centering is not appealing when based on the exact center of the data columns.

SETROWOP

Defines on-the-fly calculations for a named row created with CALCULATE ROW.

This command determines the calculation for the calculated row specified in *rowCalcName*. The following table lists the operators you use for the *operation* in the command:

Table 4-4 Operators for CALCULATE ROW

Operator	Operation
+	Addition
-	Subtraction
*	Multiplication
/	Division
%	Percentages
OFF	Turns off the calculation

The addition operator, for example, sums all values in all rows output while the operation is on. The result in the calculated row may be printed with PRINTROW at any time. You may only use a single operator per calculated row. Before using the SETROWOP command, you must define the row name with the CALCULATE ROW command, or with SAVEROW or SAVEANDOUTPUT. Refer to the CALCULATE ROW command for more information on its ability to set the row operator.

If an *operation* is not specified, the default is + (add).

Syntax

```
{ SETROWOP "rowCalcName" [ operation ] }
```

Parameters

rowCalcName
Named row, in double quotes, to which SETROWOP applies.

operation
You can use any valid row calculation expression.
SETROWOP accepts the same mathematical operators as CALCULATE ROW. In addition, SETROWOP accepts the OFF operator, which turns off row operations for rows that follow.

Notes

SETROWOP performs unary operations on the row or rows that follow. SETROWOP "*rowCalcName*" OFF turns off operations on subsequent rows.

Example

See the examples for CALCULATE ROW.

Related Topics

- CALCULATE ROW
- CLEARROWCALC
- CLEARALLROWCALC
- OFFCOLCALCS
- OFFROWCALCS
- ONCOLCALCS
- ONROWCALCS

- OUTPUT
- PRINTROW
- REMOVECOLCALCS
- SAVEANDOUTPUT
- SAVEROW
- SUPOUTPUT

SINGLECOLUMN

Displays a column heading when there is only one column member extracted in the report.

Syntax

```
<SINGLECOLUMN
```

Notes

This formatting command displays a column heading when there is only one column member selected in the report.

Example

The following report script is designed for the Sample Basic cube, available in the gallery.

```
<SINGLECOLUMN
{SUPPAGEHEAD}
<COLUMN(Year)
<ROW(Measures)
Profit Inventory Ratios
Qtr1
!
```

This examples produces the following report:

```
                    Qtr1
                ========
Profit           24,703
Inventory       117,405
Ratios               55
```

Related Topics

- COLHEADING
- PAGEHEADING
- SUPCOLHEADING
- SUPPAGEHEADING

SKIP

Outputs a number of blank lines in the report or a single line if *n* is omitted from the command. The default value is single skip.

Syntax

```
{SKIP n }
```

Parameters

n
Positive integer representing the number of lines to skip.

Notes

- SKIP is an output command.
- The value of *n* must be a positive integer.
- If you do not specify a value for *n*, {SKIP} defaults to 1.

Example

The following report script is designed for the Sample Basic cube, available in the gallery.

```
<PAGE (Measures, Market)
Texas Sales
     <COLUMN (Scenario, Year)
     Actual Budget
     Jan Feb
<ROW (Market)
<DESCENDANTS "100"
{SKIP 2}
<DESCENDANTS "200"
<DESCENDANTS "300"
     !
```

Which inserts two blank lines between the rows containing descendants of member 100 and descendants of members 200 and 300.

Related Topics

- NEWPAGE
- NOSKIPONDIMENSION
- SKIPONDIMENSION

SKIPONDIMENSION

Inserts a blank line when a member from the same dimension as the specified member changes on the next line in the report.

Syntax

```
{ SKIPONDIMENSION mbrName }
```

Parameters

mbrName
Name of single member. When a member from this dimension changes during report processing, a blank line is inserted before the member change.

Notes

This command outputs a blank line when a member from the same dimension as *mbrName* in the command changes on the next line in the report. With the ROW command, you can display members from several dimensions in columns on the side of the report. At least one member changes from one of these dimensions for each row of the report. The SKIPONDIMENSION displays a blank line before the member from the dimension changes. When combined with UNAMEONDIMENSION and/or PAGEONDIMENSION, UNAMEONDIMENSION is processed first followed by SKIPONDIMENSION and PAGEONDIMENSION in order.

Example

The following report script is designed for the Demo Basic cube, available in the gallery. The command `{SKIPONDIMENSION Year}` inserts a blank line before the row members Qtr2, Qtr3, and Qtr4 in the report.

```
<PAGE (Market, Accounts)
Chicago Sales
  <COLUMN (Scenario)
  Actual
<ROW (Year, Product)
{ SKIPONDIMENSION Year }
<CHILDREN Year
<ICHILDREN Audio
   !
```

This example produces the following report:

```
       Chicago Sales Actual

Qtr1  Stereo         2,591
      Compact_Disc   3,150
        Audio        5,741

Qtr2  Stereo         2,476
      Compact_Disc   3,021
        Audio        5,497

Qtr3  Stereo         2,567
      Compact_Disc   3,032
        Audio        5,599

Qtr4  Stereo         3,035
```

```
      Compact_Disc   3,974
        Audio        7,009
```

Related Topics

- NOPAGEONDIMENSION
- NOSKIPONDIMENSION
- PAGEONDIMENSION

SORTALTNAMES

Alphabetically sorts members by their alternate names within a member selection command (for example, <CHILDREN).

Syntax

```
<SORTALTNAMES
```

Notes

This command sorts alphabetically all members added with a member command (for example, <CHILDREN) by their alternate name. Members entered directly in the report specification without a member command, calculated rows and column names, or member commands encountered in the specification prior to the SORTALTNAMES command, are not affected by the command.

This command must precede the selection commands, for example, CHILDREN or DESCENDANTS. If no sorting commands are used, members are output in hierarchical order based on the member outline. Any sort command remains in effect until another sort command is issued.

Example

The following report script is designed for the Demo Basic cube, available in the gallery.

The command <SORTALTNAMES sorts the members added to the report with the <IDESCENDANTS Product command by the alternate name of each member. The command {OUTALTNAMES} causes alternate member names to be displayed in the report. {NOINDENTGEN} turns off hierarchical indenting so the row names line up. Indented row names are not particularly useful when the output is sorted on any criteria other than generation.

```
<PAGE (Market, Accounts, Scenario)
Chicago Sales Actual
      <COLUMN (Year)
      <CHILDREN Year
<ROW (Product)
<IDESCENDANTS Product
{NOINDENTGEN}
     !

<PAGE (Market, Accounts, Scenario)
Chicago Sales Actual
{OUTALTNAMES}
      <COLUMN (Year)
```

```
      <CHILDREN Year
<ROW (Product)
<SORTALTNAMES
{NOINDENTGEN}
<IDESCENDANTS Product
     !
```

This produces the following reports:

```
                    Chicago Sales Actual

                  Qtr1     Qtr2     Qtr3     Qtr4
               ======== ======== ======== ========

Stereo            2,591    2,476    2,567    3,035
Compact_Disc      3,150    3,021    3,032    3,974
  Audio           5,741    5,497    5,599    7,009
Television        4,410    4,001    4,934    6,261
VCR               3,879    3,579    4,276    4,877
Camera            2,506    2,522    2,602    3,227
  Visual         10,795   10,102   11,812   14,365
    Product      16,536   15,599   17,411   21,374

                    Chicago Sales Actual

                    Q1       Q2       Q3       Q4
               ======== ======== ======== ========

Audio             5,741    5,497    5,599    7,009
Camera            2,506    2,522    2,602    3,227
Compact_Disc      3,150    3,021    3,032    3,974
Product          16,536   15,599   17,411   21,374
Stereo            2,591    2,476    2,567    3,035
Television        4,410    4,001    4,934    6,261
VCR               3,879    3,579    4,276    4,877
Visual           10,795   10,102   11,812   14,365
```

Related Topics

- ALLINSAMEDIM
- CHILDREN
- DESCENDANTS
- SORTASC
- SORTDESC
- SORTGEN
- SORTLEVEL
- SORTMBRNAMES
- SORTNONE

SORTASC

Specifies an ascending sort order.

Syntax

```
<SORTASC
```

Notes

This command determines the order in which members are sorted in member commands in the report specification. You use this command prior to the other sort commands including SORTALTNAMES, SORTGEN, SORTLEVEL and SORTMBRNAMES. With the SORTASC command, all following members selected are sorted into ascending order starting with either the letter "a" or the lowest generation and moving toward the letter "z" or the highest generation. Sorting in ascending order is the default sort order and is only changed with the SORTDESC command.

This command must precede the selection commands, or example, CHILDREN or DESCENDANTS. If no sorting commands are used, members are output in hierarchical order based on the member outline. Any sort command remains in effect until reset by another sort command.

The SORTASC command can be used to restore the default (ascending) sort order. It reverses the effects of a previously-specified SORTDESC command.

Related Topics

- ALLINSAMEDIM
- CHILDREN
- DESCENDANTS
- SORTALTNAMES
- SORTDESC
- SORTGEN
- SORTLEVEL
- SORTMBRNAMES
- SORTNONE

SORTDESC

Specifies a descending, hierarchical sort order.

Syntax

```
<SORTDESC
```

Notes

This command determines the order in which items are sorted in member commands in the report specification. You use this command prior to the other sort commands including SORTALTNAMES, SORTGEN, SORTLEVEL and SORTMBRNAMES. With the SORTDESC

command, all members are sorted in descending order starting with either the letter "z" or the highest generation and moving toward the letter "a" or the lowest generation.

This command must precede the selection commands, for example CHILDREN or DESCENDANTS. If no sorting commands are used, members are output in hierarchical order based on the member outline. Any sort command remains in effect until another sort command is issued.

Example

The following example is based on Sample Basic.

```
<PAGE (Market, Measures)
Massachusetts Sales
<COLUMN (Scenario, Year)
Actual Budget
Jan Feb Mar
<ROW (Product)
<SORTDESC
<ICHILDREN Product
     !
```

This example produces the following report:

```
                                  Massachusetts Sales
                          Actual                          Budget

                     Jan      Feb      Mar      Jan      Feb      Mar
                ======== ======== ======== ======== ======== ========
  Product          1,251    1,206    1,203    1,170    1,130    1,120
Diet             #Missing #Missing #Missing #Missing #Missing #Missing
400                   160      136      132      160      140      130
300                   130      132      129      100      100      100
200                   467      468      450      450      450      430
100                   494      470      492      460      440      460
```

Related Topics

- ALLINSAMEDIM
- DESCENDANTS
- SORTASC
- SORTALTNAMES
- SORTGEN
- SORTLEVEL
- SORTMBRNAMES
- SORTNONE

SORTGEN

Sorts all members added with a member command, such as <CHILDREN, according to the generation of the member in the cube outline. The top member of the dimension is generation

1 for the dimension. The children of the top are generation 2, and so on. Each member's generation is one higher than its parent.

The following are not affected by this command:

- Members entered directly in the report specification without using a member selection command
- Calculated rows and column names
- Member commands encountered in the script prior to the SORTGEN command

This command must precede the selection commands, for example CHILDREN or DESCENDANTS. If no sorting commands are used, members are output in hierarchical order based on the member outline. Any sort command remains in effect until another sort command is issued.

Syntax

```
<SORTGEN
```

Notes

- SORTGEN sorts members from the last generation, which is the leaf member of the dimension, to the first generation in the branch, which is the root of the dimension.
- SORTGEN is not affected by other sort commands.

Example

The following example is based on Sample Basic.

```
<PAGE (Product, Measures)
East Sales
<COLUMN (Scenario, Year)

Actual Budget
Jan Feb Mar
<ROW (Market)
<SORTGEN
<IDESCENDANTS Market
     !
```

Which produces the following report:

```
                                  Product Sales

                        Actual                          Budget
                   Jan      Feb      Mar      Jan      Feb      Mar
              ======== ======== ======== ======== ======== ========
Market          31,538   32,069   32,213   29,480   30,000   30,200
  East           6,780    6,920    6,921    6,180    6,350    6,360
  West          10,436   10,564   10,674    9,460    9,530    9,640
  South          3,976    4,082    4,055    3,870    3,970    3,990
  Central       10,346   10,503   10,563    9,970   10,150   10,210
New York         2,479    2,625    2,601    2,300    2,450    2,440
Massachusetts    1,251    1,206    1,203    1,170    1,130    1,120
```

```
Florida            1,321    1,383    1,428    1,170    1,250    1,290
Connecticut        1,197    1,157    1,118    1,080    1,040    1,000
New Hampshire        532      549      571      460      480      510
California         3,602    3,699    3,755    3,450    3,490    3,570
Oregon             1,741    1,667    1,650    1,590    1,530    1,500
Washington         1,605    1,629    1,601    1,420    1,450    1,440
Utah               1,388    1,397    1,424    1,320    1,320    1,350
Nevada             2,100    2,172    2,244    1,680    1,740    1,780
Texas              1,455    1,544    1,506    1,490    1,580    1,560
Oklahoma             980      980    1,001      920      920      940
Louisiana            978      980      948      900      910      900
New Mexico           563      578      600      560      560      590
Illinois           2,538    2,653    2,697    2,580    2,690    2,740
Ohio               1,471    1,411    1,390    1,470    1,410    1,380
Wisconsin          1,341    1,363    1,369    1,280    1,330    1,330
Missouri           1,009    1,014    1,039      960      980    1,000
Iowa               2,029    2,042    2,104    1,810    1,800    1,860
Colorado           1,958    2,020    1,964    1,870    1,940    1,900
```

Related Topics

- ALLINSAMEDIM
- CHILDREN
- DESCENDANTS
- SORTASC
- SORTALTNAMES
- SORTDESC
- SORTLEVEL
- SORTMBRNAMES
- SORTNONE

SORTLEVEL

Sorts all members added with a member selection command, such as <CHILDREN, according to the level of the member.

Each member is 1 level higher than the highest level of its children. Members entered without using a member selection command, calculated rows and column names, or member commands encountered prior to the SORTLEVEL command are not affected.

This command must precede the selection commands, for example CHILDREN or DESCENDANTS.

Syntax

```
<SORTLEVEL
```

Notes

SORTLEVEL sorts members from the lowest level to the highest level.

Example

The following example is based on Sample Basic.

```
<PAGE (Product, Measures)
East Sales
<COLUMN (Scenario, Year)

Actual Budget
Jan Feb Mar
<ROW (Market)
<SORTLEVEL
<IDESCENDANTS Market
     !
```

This example produces the following report:

```
                                  Product Sales

                        Actual                          Budget
                   Jan      Feb      Mar      Jan      Feb      Mar
              ======== ======== ======== ======== ======== ========
New York         2,479    2,625    2,601    2,300    2,450    2,440
Massachusetts    1,251    1,206    1,203    1,170    1,130    1,120
Florida          1,321    1,383    1,428    1,170    1,250    1,290
Connecticut      1,197    1,157    1,118    1,080    1,040    1,000
New Hampshire      532      549      571      460      480      510
California       3,602    3,699    3,755    3,450    3,490    3,570
Oregon           1,741    1,667    1,650    1,590    1,530    1,500
Washington       1,605    1,629    1,601    1,420    1,450    1,440
Utah             1,388    1,397    1,424    1,320    1,320    1,350
Nevada           2,100    2,172    2,244    1,680    1,740    1,780
Texas            1,455    1,544    1,506    1,490    1,580    1,560
Oklahoma           980      980    1,001      920      920      940
Louisiana          978      980      948      900      910      900
New Mexico         563      578      600      560      560      590
Illinois         2,538    2,653    2,697    2,580    2,690    2,740
Ohio             1,471    1,411    1,390    1,470    1,410    1,380
Wisconsin        1,341    1,363    1,369    1,280    1,330    1,330
Missouri         1,009    1,014    1,039      960      980    1,000
Iowa             2,029    2,042    2,104    1,810    1,800    1,860
Colorado         1,958    2,020    1,964    1,870    1,940    1,900
  East           6,780    6,920    6,921    6,180    6,350    6,360
  West          10,436   10,564   10,674    9,460    9,530    9,640
  South          3,976    4,082    4,055    3,870    3,970    3,990
  Central       10,346   10,503   10,563    9,970   10,150   10,210
    Market      31,538   32,069   32,213   29,480   30,000   30,200
```

Related Topics

- ALLINSAMEDIM
- CHILDREN
- DESCENDANTS

- SORTASC
- SORTALTNAMES
- SORTDESC
- SORTGEN
- SORTMBRNAMES
- SORTNONE

SORTMBRNAMES

Sorts all members added with a member selection command, such as <CHILDREN alphabetically by member name when the members are added to the report. Members entered without using a member selection command, calculated rows and column names, or member commands encountered in the specification prior to the SORTMBRNAMES command are not affected.

This command must precede the selection commands. Any sort command remains in effect until another sort command is issued.

Syntax

```
<SORTMBRNAMES
```

Notes

- SORTMBRNAMES disregards hierarchical relationships between members.
- Numeric characters rise above alphanumeric characters in the sort order. For example, 100 rises above A200, which rises above Accounts.
- If SORTASC or SORTDESC are used to control sorting, they must precede the SORTMBRNAMES command.

Example

The following example is based on Sample Basic.

```
<PAGE (Product, Measures)
Sales
<COLUMN (Scenario, Year)
Actual Budget
Jan Feb Mar
<ROW (Market)
<SORTMBRNAMES
<IDESCENDANTS South
     !
```

This example produces the following report:

```
                                Product Sales

                    Actual                          Budget
          Jan       Feb       Mar       Jan       Feb       Mar
 ========= ========= ========= ========= ========= ========= =========
```

```
Louisiana              978      980      948      900      910      900
New Mexico             563      578      600      560      560      590
Oklahoma               980      980    1,001      920      920      940
  South              3,976    4,082    4,055    3,870    3,970    3,990
Texas                1,455    1,544    1,506    1,490    1,580    1,560
```

SORTNONE

Disables all previous sorting commands.

Syntax

```
<SORTNONE
```

Notes

This command disables all previous sorting commands so that members added to the report with member selection commands are added in outline order.

Related Topics

- ALLINSAMEDIM
- DESCENDANTS
- SORTALTNAMES
- SORTDESC
- SORTGEN
- SORTLEVEL
- SORTMBRNAMES

SPARSE

Tells Essbase to use the sparse data extraction method, which optimizes performance when a high proportion of the reported data rows are `#MISSING`. Essbase cannot use the sparse data retrieval optimization method on Dynamic Calc.

If you have at least one sparse row dimension in your report, Essbase uses the sparse data extraction method in two cases:

- Case 1: You use SUPMISSINGROWS in your report script to suppress `#MISSING` values, and Essbase estimates that a very high proportion of the requested data rows are `#MISSING`. In this case, Essbase implicitly uses the sparse method to optimize performance.
- Case 2: You explicitly use the SPARSE command in your report script. This forces Essbase to use the sparse method. If you use the SPARSE command in a report, and you have not used SUPMISSINGROWS, Essbase automatically turns on SUPMISSINGROWS for the report containing SPARSE. Essbase also turns on SUPMISSINGROWS for all following reports in your report script, unless you specify INCMISSINGROWS in a subsequent report.

> **Note:**
>
> If your report does not contain at least one sparse row dimension, Essbase cannot use the sparse method, and reverts to the regular method. Essbase displays a message to tell you that it cannot use the sparse method.

When Essbase uses the sparse method, it displays the following message: `Report Writer Sparse Extractor method will be executed.`

If you have at least one sparse row dimension in your report, the report is very large, and a very high proportion of the reported data rows are `#MISSING`, you may want to use the SPARSE command. You can then assess if this improves your report script performance.

If your report requests a small number of cells (`#MISSING` and non-missing), the sparse data extraction method is less efficient than the regular method. In this case, Essbase uses the regular method, unless you have at least one sparse row dimension in your report, and you explicitly use the SPARSE command.

SPARSE method: When Essbase uses the sparse data extraction method, Essbase first selects the row member combinations you have requested in your report script. Essbase looks at only the non-missing data blocks for these row member combinations. If your database is very sparse, this method is very efficient.

Regular method: By contrast, when Essbase uses the regular data extraction method, it cycles through every possible member combination requested by the report script. It then reports only those rows that are *not* `#MISSING`.

For example, suppose that only 1 in 10,000 data cells exist in a cube. The remaining cells are `#MISSING`. On this database, you run a report script that requests 100% of the data, and uses SUPMISSINGROWS to suppress the `#MISSING` values.

If Essbase uses the regular method of data extraction, it cycles through all the requested member combinations.

If Essbase uses the sparse extraction method, it looks only at the non-missing data blocks for the row member combinations requested. As this cube is very sparse, the number of data blocks is probably low. The sparse method produces the report much faster.

To exclude the sparse data extraction method from being used, use the <SPARSEOFF command. For example, you might want to use this command when reporting on data that includes Dynamic Calc members.

Syntax

```
<SPARSE


<SPARSEOFF
```

Notes

- The sparse extraction method cannot be used if the report contains attribute dimensions.
- When you include multiple logical reports separated by a ! within one report script, include the format commands/Headings for each logical report.

Related Topics

- SUPMISSINGROWS

STARTHEADING

Starts the definition of the page heading in place of the default heading, which is displayed at the top of each page in the report or immediately following a HEADING command.

Syntax

```
{ STARTHEADING }
```

Notes

- This command starts the definition of the page heading in place of the default heading, which is displayed at the top of each page in the report or immediately following a HEADING command. The ENDHEADING command signifies the end of the heading; all commands encountered between the STARTHEADING and ENDHEADING are part of the heading definition. Unless SUPHEADING is used outside the STARTHEADING / ENDHEADING group, the commands within the STARTHEADING/ENDHEADING group are re-executed at the start of each new page.
- By default, new pages are started whenever a page member changes, the makeup of column headings change, the page length is exceeded and SUPFEED has not been used, the NEWPAGE command is issued, the HEADING command is issued, or the PAGEONDIMENSION command causes a page break. A custom heading will include the default page header and column headers unless they are suppressed with SUPPAGEHEADING and/or SUPCOLHEADING in the custom heading definition.
- Headings (whether the default page and column headings or a custom heading created with ENDHEADING) do not get output right at the start of a new page. They are delayed until the next non-suppressed output data row is encountered, and even then the heading is output only after the data row's format { } commands have been processed. This avoids blank pages with nothing but headers on them but it can make it awkward to put out a TEXT (or other format which produces output) between the heading and the first output data row.
- To use a subsitution variable in a heading, you must use the TEXT command. Example:

```
{STARTHEADING TEXT 2 "Prepared by:" 14 "*USERNAME"
  C "The Electronics Club" 60 "*PAGESTRING"
  TEXT C "Quarterly Sales by City" 60 "*DATE"
  SUPPAGEHEADING
  Text 2 &Month
  TEXT 2 "*PAGEHDR" SKIP ENDHEADING}
!
```

> **Tip:**
>
> To ensure that headings display correctly, structure the report script so that column member selections precede row member selections, and make sure that the script contains at least one column member.

Default Value

Replaces default heading.

Example

The following example shows how to define a heading for a report. All the commands within the STARTHEADING and ENDHEADING commands are executed at the top of each page. The TEXT commands display information about the person who prepared the report, the date the report was generated, and other title information.

```
<PAGE (Market, Accounts, Scenario)
Chicago Sales Actual

      <COLUMN (Year)
      <CHILDREN Year

<ROW (Product)

{ STARTHEADING TEXT 2 "Prepared by:" 14 "*USERNAME"
  C "The Electronics Club" 60 "*PAGESTRING"
  TEXT C "Quarterly Sales by City" 60 "*DATE"
  SUPPAGEHEADING
  TEXT 2 "*PAGEHDR" SKIP ENDHEADING}
<IDESCENDANTS Product
     !
```

This example produces the following report:

```
  Prepared by:ksmith     The Electronics Club              Page: 1
                        Quarterly Sales by City            06/10/20
  Chicago Sales Actual


                     Qtr1     Qtr2     Qtr3     Qtr4
                 ======== ======== ======== ========

Stereo              2,591    2,476    2,567    3,035
Compact_Disc        3,150    3,021    3,032    3,974
  Audio             5,741    5,497    5,599    7,009
Television          4,410    4,001    4,934    6,261
VCR                 3,879    3,579    4,276    4,877
Camera              2,506    2,522    2,602    3,227
  Visual           10,795   10,102   11,812   14,365
    Product        16,536   15,599   17,411   21,374
```

Related Topics

- ENDHEADING
- HEADING
- IMMHEADING
- SUPCOLHEADING

- SUPHEADING
- SUPPAGEHEADING

SUDA

Selects members based on a common attribute, defined as a UDA (user-defined attribute) along with their shared counterparts.

Syntax

```
<SUDA (dimName, udaStr)
```

Parameters

dimName
Name of the dimension associated with *udaStr*.

udaStr
Name of the UDA.

Notes

- You can use the <SUDA command as a standalone command or as a selection command inside the LINK statement.
- You cannot use attributes as arguments.
- With the <UDA command, Report Extractor selects only the members tagged with the specified UDA. Shared members are not selected. For example, consider the following outline structure:

```
Product
  100
    100-10
    100-20 (UDAS: No Carb)
  200
    200-10
    200-20 (UDAS: No Carb)
Diet
  100-20 (shared)
  200-20 (shared)
```

The following command returns no members because the children of Diet are not recognized as having the UDA "No Carb":

<CHILDREN (Diet) and <UDA (Product, "No Carb")

In contrast, the <SUDA report command enables Report Extractor to recognize all instances of shared members as having the UDA associated with the prototype member. For example, the following command:

<CHILDREN (Diet) and <SUDA (Product, "No Carb")

returns the following members:

```
[Product].[100].[100-20]
[Product].[200].[200-20]
```

```
[Product].[Diet].[100-20]
[Product].[Diet].[200-20]
```

because these members are children of Diet, and the "No Carb" UDA associated with the prototype members is also associated with the shared members.

Example

The following example uses the SUDA command within a LINK statement to select shared members under Diet that are not "No Carb":

```
<LINK (<DESC(Diet) and not <SUDA (product, "No Carb))
```

Related Topics

- UDA

SUPALL

Suppresses the display of the page and column headings, all member names, page breaks, commas, and brackets.

Syntax

```
{ SUPALL }
```

Notes

With this command, you see the data of the report and any text displayed as the result of the TEXT command. This command is equivalent to SUPHEADING, SUPPAGEHEADING, SUPCOLHEADING, SUPNAMES, SUPBRACKETS, SUPFEED, and SUPCOMMAS.

Example

The following report script is designed for the Demo Basic cube, available in the gallery.

```
<PAGE (Market, Accounts, Scenario)
Chicago Sales Actual
      <COLUMN (Year)
      <CHILDREN Year
<ROW (Product)
<ICHILDREN Audio
     !

{ SUPALL }
Boston Sales Actual
      <CHILDREN Year
<ICHILDREN Audio
     !
```

This example produces the following report.

> **Note:**
>
> The last three rows show the totals for Boston, without headings.

```
                  Chicago Sales Actual

                      Qtr1   Qtr2   Qtr3   Qtr4
                     ====== ====== ====== ======

Stereo                2,591  2,476  2,567  3,035
Compact_Disc          3,150  3,021  3,032  3,974
  Audio               5,741  5,497  5,599  7,009

    2450     2341     2377     2917
    3290     3034     3132     3571
    5740     5375     5509     6488
```

Related Topics

- SUPBRACKETS
- SUPCOLHEADING
- SUPCOMMAS
- SUPCURHEADING
- SUPEMPTYROWS
- SUPEUROPEAN
- SUPFEED
- SUPHEADING
- SUPMISSINGROWS
- SUPNAMES
- SUPPAGEHEADING
- SUPZEROROWS

SUPBRACKETS

Suppresses the display of parentheses around negative numbers.

Syntax

```
{ SUPBRACKETS }
```

Notes

The negative sign,(-), rather than parentheses, indicates negative numbers.

Example

```
{SUPBRACKETS}
```

displays (34.43) as -34.43.

Related Topics

- COMMAS
- DECIMAL
- SUPALL
- SUPBRACKETS
- SUPCOMMAS

SUPCOLHEADING

Suppresses display of default column headings.

Syntax

```
{ SUPCOLHEADING }
```

Notes

Unless a custom heading is defined, you will see only the page heading members at the top of the page and row members on the left side of each row. The keyword >*COLHDR with the TEXT command is not affected by SUPCOLHEADING and may still be used to generate column headings where desired.

Example

The following report script is designed for the Demo Basic cube, available in the gallery.

```
<PAGE (Market, Accounts, Scenario)
Boston Sales Actual
      <COLUMN (Year)
      <CHILDREN Year
<ROW (Product)
<ICHILDREN Audio
     !

{ SUPCOLHEADING }
Boston Sales Actual
      <COLUMN (Year)
      <CHILDREN Year
<ROW (Product)
<ICHILDREN Audio
     !
```

This example produces the following reports:

```
                        Boston Sales Actual

                    Qtr1     Qtr2     Qtr3     Qtr4
                ======== ======== ======== ========

Stereo             2,450    2,341    2,377    2,917
Compact_Disc       3,290    3,034    3,132    3,571
  Audio            5,740    5,375    5,509    6,488

                        Boston Sales Actual

Stereo             2,450    2,341    2,377    2,917
Compact_Disc       3,290    3,034    3,132    3,571
  Audio            5,740    5,375    5,509    6,488
```

Related Topics

- COLHEADING
- NAMESON
- PAGEHEADING
- SUPNAMES
- SUPPAGEHEADING

SUPCOMMAS

Suppresses the display of commas in numbers greater than 999.

> **Note:**
>
> The display of commas is the default.

Syntax

```
{ SUPCOMMAS }
```

Example

```
{SUPCOMMAS}
```

displays the number 12,234,534.23 as 12234534.23.

Related Topics

- BRACKETS
- COMMAS
- DECIMAL
- SUPBRACKETS

SUPCURHEADING

Suppresses the display of currency information when you use the CURRENCY command to convert the data values in your report to a specified currency.

Syntax

```
{ SUPCURHEADING }
```

Notes

The keyword *CURRENCY with the TEXT command is not affected by SUPCURHEADING and may be used after SUPCURHEADING to create custom currency heading and placement.

Related Topics

- CURHEADING
- CURRENCY

SUPEMPTYROWS

Suppresses the display of rows that have only 0 or `#MISSING` values in the row.

Syntax

```
{ SUPEMPTYROWS }
```

Notes

This command suppresses the display of zero rows, for example, rows that have only 0 or missing values. The report will contain only rows which have at least one data value which is neither `#MISSING` nor zero.

Example

{SUPEMPTYROWS} would suppress the display of the following row in a report:

```
Qtr1   Actual 0  #Missing  0  0  #Missing
```

Related Topics

- INCEMPTYROWS
- INCMISSINGROWS
- INCZEROROWS
- SUPMISSINGROWS
- SUPZEROROWS

SUPEUROPEAN

Disables the European method for displaying numbers.

Syntax

```
{ SUPEUROPEAN }
```

Notes

In European mode, commas separate the decimal and whole number portion of a data value, while decimal points are used for the thousands separator character. Non-European number display uses commas to separate thousands and the decimal point to separate decimals.

SUPEUROPEAN need only be used after a EUROPEAN command.

Default Value

Non-European is the default.

Example

See the example for EUROPEAN.

Related Topics

- EUROPEAN

SUPFEED

Suppresses the automatic insertion of a physical page break whenever the number of lines on a page exceeds the current PAGELENGTH setting.

Syntax

```
{ SUPFEED }
```

Notes

This command disables the FEEDON command. The command FEEDON re-enables physical page breaks. The default page length is 66 lines unless reset with the PAGELENGTH command.

Default Value

Default when performing ad-hoc reports in a grid client.

Related Topics

- FEEDON
- NEWPAGE
- PAGELENGTH

SUPFORMATS

Suppresses formats that produce extra output such as underlines and skips.

Syntax

```
{ SUPFORMATS }
```

Notes

The SUPFORMATS command is used in those instances where you need to suppress formats which produce output, such as underlines, skips, etc., because the data row with which the formats are associated is automatically (and therefore unpredictably) suppressed due to commands such as SUPMISSING. Otherwise, a page could be filled with "orphan" underlines and no data. If you want to retain formatting in this case, you need to turn the formats on by using the INCFORMATS command.

Default Value

Set to "ON" by default when the SUPMASK, SUPMISSING, or SUPZERO commands are used.

Related Topics

- INCFORMATS

SUPHEADING

Suppresses the display of the default heading (page header and column headers) or custom header, if defined, at the top of each page.

Syntax

```
{ SUPHEADING }
```

Notes

A custom heading is defined with the STARTHEADING and ENDHEADING commands. The HEADING command cancels the effect of the SUPHEADING command in addition to displaying the heading immediately prior to the next non-suppressed data row to be output. By default, new pages are started either when a page member changes, the makeup of column headings change, the page length is exceeded and SUPFEED has not been used, the NEWPAGE command is issued, the HEADING command is issued, or the PAGEONDIMENSION command causes a page break.

Default Value

Display of the default heading is suppressed.

Example

See the example for STARTHEADING.

Related Topics

- ENDHEADING
- HEADING
- IMMHEADING
- STARTHEADING

SUPMASK

Suppresses the display of a text mask.

Syntax

```
{ SUPMASK }
```

Notes

Text masks are defined using the MASK command. The MASK command cancels the effect of the SUPMASK command, in addition to defining a new mask. While SUPMASK is in effect, a mask text string may still be output using the TEXT command's *MASK option.

Related Topics

- MASK
- TEXT

SUPMISSINGROWS

Suppresses the display of rows that contain only `#MISSING` values.

Syntax

```
{ SUPMISSINGROWS }
```

Example

The following report script is designed for the Sample Basic cube, available in the gallery.

```
<PAGE("Measures")
<COLUMN("Scenario", "Year")
<ROW("Market", "Product")
"Sales"
"Scenario"
"Jan" "Feb" "Mar"
"New York"
"Product" "100" "100-10" "100-20" "100-30" "200" "200-10" "200-20" "200-30"
"200-40" "300" "300-10" "300-20" "300-30" "400" "400-10" "400-20" "400-30"
"Diet" "100-20" "200-20" "300-30"
!

<PAGE("Measures")
<COLUMN("Scenario", "Year")
<ROW("Market", "Product")
{SUPMISSINGROWS}
{NOINDENTGEN}
"Sales"
"Scenario"
"Jan" "Feb" "Mar"
"New York"
"Product" "100" "100-10" "100-20" "100-30" "200" "200-10" "200-20" "200-30"
"200-40" "300" "300-10" "300-20" "300-30" "400" "400-10" "400-20" "400-30"
```

```
"Diet" "100-20" "200-20" "300-30"
!
```

This example produces the following reports. The second report has missing rows suppressed.

```
                                        Sales Scenario

                                     Jan      Feb      Mar
                                ======== ======== ========

New York             Product       2,479    2,625    2,601
                       100           678      645      675
                     100-10          678      645      675
                     100-20    #Missing #Missing #Missing
                     100-30    #Missing #Missing #Missing
                       200           551      641      586
                     200-10           61       61       63
                     200-20    #Missing #Missing #Missing
                     200-30    #Missing #Missing #Missing
                     200-40          490      580      523
                       300           663      675      695
                     300-10          483      495      513
                     300-20          180      180      182
                     300-30    #Missing #Missing #Missing
                       400           587      664      645
                     400-10          234      232      234
                     400-20          219      243      213
                     400-30          134      189      198
                       Diet      #Missing #Missing #Missing

                                        Sales Scenario

                                     Jan      Feb      Mar
                                ======== ======== ========

New York           Product         2,479    2,625    2,601
                   100               678      645      675
                   100-10            678      645      675
                   200               551      641      586
                   200-10             61       61       63
                   200-40            490      580      523
                   300               663      675      695
                   300-10            483      495      513
                   300-20            180      180      182
                   400               587      664      645
                   400-10            234      232      234
                   400-20            219      243      213
                   400-30            134      189      198
```

Related Topics

- INCEMPTYROWS
- INCMISSINGROWS
- INCZEROROWS

- SUPEMPTYROWS
- SUPZEROROWS

SUPNAMES

Suppresses the display of row member names in the final report.

Syntax

```
{ SUPNAMES }
```

Notes

The NAMESON command re-enables the display of row member names in the report.

Example

The following example is based on Demo Basic.

```
<PAGE (Market, Accounts, Scenario)
Chicago Sales Actual

      <COLUMN (Year)
      <CHILDREN Year

<ROW (Product)
<ICHILDREN Audio
     !

{ SUPNAMES }
Boston Sales Actual
      <CHILDREN Year
<ICHILDREN Audio
     !
```

This example produces the following report:

> **Note:**
>
> The rows with the suppressed row member names are not indented with whitespace.

```
                    Chicago Sales Actual
                  Qtr1     Qtr2     Qtr3     Qtr4
                ======== ======== ======== ========
Stereo             2,591    2,476    2,567    3,035
Compact_Disc       3,150    3,021    3,032    3,974
  Audio            5,741    5,497    5,599    7,009
                    Boston Sales Actual
                  Qtr1     Qtr2     Qtr3     Qtr4
                ======== ======== ======== ========
```

```
2,450    2,341    2,377    2,917
3,290    3,034    3,132    3,571
5,740    5,375    5,509    6,488
```

Related Topics

- COLHEADING
- NAMESON
- PAGEHEADING
- SUPCOLHEADING
- SUPPAGEHEADING

SUPOUTPUT

Suppresses all output, except columns, while continuing to process other operations such as calculations or format settings. Use the OUTPUT command to resume output.

Syntax

```
{ SUPOUTPUT }
```

Example

The following report script is designed for the Demo Basic cube, available in the gallery.

```
<PAGE (Market, Accounts, Scenario)
Chicago Sales Actual

      <COLUMN (Year)
      <CHILDREN Year

<ROW (Product)
<ICHILDREN Audio
Stereo
Compact_Disc
{SUPOUTPUT}
VCR
TELEVISION
{OUTPUT}
Audio
     !
{ SUPNAMES }
Boston Sales Actual
      <CHILDREN Year
<ICHILDREN Audio
     !
```

This script produces the same report as shown in the SUPNAMES example.

Related Topics

- OUTPUT

SUPPAGEHEADING

Suppresses display of the page member heading whenever a heading is generated.

Syntax

```
{ SUPPAGEHEADING }
```

Notes

This command does not suppress column headings and row members.

To reinstate page headings, use the PAGEHEADING command.

The keyword *PAGEHDR with the TEXT command may be used after a SUPPAGEHEADING to produce a custom page member heading. *PAGEHDR with the TEXT is not affected by SUPCOLHEADING.

Example

The following report script is designed for the Demo Basic cube, available in the gallery.

```
<PAGE (Market, Accounts, Scenario)
{ STARTHEADING
  SUPPAGEHEADING
  TEXT 2 "*DATETIME" C "Audio Sales Report" 65 "*PAGESTRING" SKIP
  TEXT 2 "City: " 12 "*PAGEHDR 1"
  TEXT 2 "Account: " 12 "*PAGEHDR 2" SKIP
  ENDHEADING }

Boston Sales Actual
      <CHILDREN Year
<ICHILDREN Audio
     !
```

This example produces the following report:

```
  06/10/20 07:07:13       Audio Sales Report                    Page: 1

  City:     Boston
  Account:  Sales

                     Qtr1     Qtr2     Qtr3     Qtr4
                 ======== ======== ======== ========

Stereo              2,450    2,341    2,377    2,917
Compact_Disc        3,290    3,034    3,132    3,571
  Audio             5,740    5,375    5,509    6,488
```

Related Topics

- COLHEADING
- HEADING

- IMMHEADING
- NAMESON
- PAGEHEADING
- SUPCOLHEADING
- SUPNAMES
- TEXT

SUPSHARE

Suppresses the display of later instances of shared members when you use generation or level names to extract data for your report.

Syntax

```
<SUPSHARE
```

Notes

This command suppresses the display of later instances of shared members only when you extract data using:

- Default or user-defined generation or level names
- DIMBOTTOM
- OFSAMEGEN
- ONSAMELEVELAS

SUPSHARE suppresses the display for the duration of the script, which can contain one or more reports. Use the SUPSHAREOFF command to reinstate the display of shared members.

Default Value

SUPSHAREOFF.

Example

The Sample Basic database has a shared level of diet drinks. The shared members are 100-20 (Diet Cola), 200-20 (Diet Root Beer), and 300-30 (Diet Cream). All are level 0 members on the Product dimension. The following report:

```
{SUPMISSINGROWS}
<SUPSHARE
<PAGE (Measures, Market, Scenario)
Sales West Actual
<COLUMN (Year)
<IDESCENDANTS Qtr1
<ROW (Product)
lev0,Product
!
```

returns the following data. The shared members appear only once in the data.

```
                Sales West Actual
                 Jan     Feb      Mar    Qtr1
               ======  ======  ======  ======
100-10         1,174   1,146   1,173   3,493
100-20           700     726     727   2,153
100-30           465     426     413   1,304
200-10           667     705     707   2,079
200-20         1,203   1,209   1,209   3,621
200-30           853     845     880   2,578
300-10         1,102   1,127   1,133   3,362
300-20           523     546     566   1,635
300-30           977   1,029   1,040   3,046
400-10         1,115   1,122   1,107   3,344
400-20         1,032   1,065   1,100   3,197
400-30           625     618     619   1,862
```

Related Topics

- SUPSHAREOFF

SUPSHAREOFF

The SUPSHAREOFF command reinstates the display of later instances of shared members after they have been suppressed using the SUPSHARE command.

Syntax

```
<SUPSHAREOFF
```

Notes

You can suppress and reinstate shared member display only when you extract data for your report using:

- Default or user-defined generation or level names
- DIMBOTTOM
- OFSAMEGEN
- ONSAMELEVELAS

Default Value

SUPSHAREOFF.

Example

The Sample Basic database has a shared level of diet drinks. The shared members are 100-20 (Diet Cola), 200-20 (Diet Root Beer), and 300-30 (Diet Cream). All are level 0 members on the Product dimension. The following report:

```
{SUPMISSINGROWS}
<SUPSHAREOFF
<PAGE (Measures, Market, Scenario)
Sales West Actual
```

```
<COLUMN (Year)
<IDESCENDANTS Qtr1
<ROW (Product)
lev0,Product
!
```

returns the following data. The example assumes that you have used SUPSHARE in a previous report in the report script. The SUPSHAREOFF command reinstates the shared member display so that the shared members appear twice in the report.

```
                    Sales West Actual
                Jan         Feb         Mar         Qtr1
               ======      ======      ======      ======
100-10         1,174       1,146       1,173       3,493
100-20           700         726         727       2,153
100-30           465         426         413       1,304
200-10           667         705         707       2,079
200-20         1,203       1,209       1,209       3,621
200-30           853         845         880       2,578
300-10         1,102       1,127       1,133       3,362
300-20           523         546         566       1,635
300-30           977       1,029       1,040       3,046
400-10         1,115       1,122       1,107       3,344
400-20         1,032       1,065       1,100       3,197
400-30           625         618         619       1,862
100-20           700         726         727       2,153
200-20         1,203       1,209       1,209       3,621
300-30           977       1,029       1,040       3,046
```

Related Topics

- SUPSHARE

SUPZEROROWS

The SUPZEROROWS command suppresses the display of rows that have only 0 values.

Syntax

```
{ SUPZEROROWS }
```

Example

{SUPZEROROWS} would not display the following row in the report:

```
Qtr1   Actual     0   0   0   0
```

but would display the following row:

```
Qtr1   Actual 0   #Missing   0   0
```

Related Topics

- INCEMPTYROWS

- INCZEROROWS
- SUPEMPTYROWS
- SUPMISSINGROWS

SYM

Forces a symmetric report, regardless of the data selection in the report script. Use SYM to change the symmetry of a report that Essbase would otherwise create as an asymmetric report.

Syntax

```
<SYM
```

Notes

This command is used to set the report type as symmetric. Under default conditions (for example, when neither the ASYM nor SYM commands have been used), Essbase will print an asymmetric report (with BLOCKHEADERS) when all column dimensions include the same number of selected members and all members for each column dimension are on the same line. Otherwise, a symmetric report (with PYRAMIDHEADERS) is produced. If the <SYM keyword is used, all report headers will appear in a symmetric format, even if there are equal numbers of members in each row of the column header. A symmetric report will also result if at least one of the column member lists is broken out onto more than one line.

When the <SYM keyword is used, the report will always be generated as a symmetric report, even with equal numbers of members selected in each column dimension. This is especially useful when you want to create a symmetric report without having to repeatedly type the lower-level members of symmetric/asymmetric reports. For a more detailed explanation see the <ASYM command. To turn off symmetric-only mode, use the <ASYM command.

Default Value

Essbase prints a symmetric report (with PYRAMIDHEADERS) when column dimensions do not include the same number of selected members or the members for each column dimension are not on the same line.

Example

The following report script example is designed to work with Sample Basic, which is available in the gallery. It generates an asymmetric report followed by a symmetric report.

```
<PAGE (Measures, Market)
Texas Sales
<ASYM
     <COLUMN (Scenario, Year)
     Actual Budget
     Jan Feb
<ROW (Product)
<IDESCENDANTS "100"
     !

<PAGE (Measures, Market)
Texas Sales
<SYM
```

```
     <COLUMN (Scenario, Year)
     Actual Budget
     Jan Feb
<ROW (Product)
<IDESCENDANTS "100"
     !
```

This example produces the following reports:

```
                    Sales Texas

                   Actual   Budget
                      Jan      Feb
                 ======== ========

100-10                452      580
100-20                190      230
100-30           #Missing #Missing
  100                 642      810

                            Sales Texas

                         Actual            Budget
                      Jan      Feb      Jan      Feb
                 ======== ======== ======== ========

100-10                452      465      560      580
100-20                190      190      230      230
100-30           #Missing #Missing #Missing #Missing
  100                 642      655      790      810
```

Related Topics

- ASYM

TABDELIMIT

The TABDELIMIT command places tabs rather than spaces between columns.

Syntax

```
{ TABDELIMIT }
```

Notes

This command is useful when you want to turn report output into a more compressed form for export. TABDELIMIT can occur anywhere in a report script.

Example

The following report scripts are designed for the Sample Basic cube, available in the gallery.

```
<PAGE (Scenario)
<COLUMN (Year)
<ROW (Product, Market, Measures)
```

```
{Tabdelimit}
{ROWREPEAT}
<ICHILDREN Year
<DIMBOTTOM Product
<DIMBOTTOM Market
<CHILD Profit
 !
```

This example produces the following report (example truncated):

```
    Scenario
    Qtr1 Qtr2 Qtr3 Qtr4 Year

100-10 New York Margin 1,199 1,416 1,568 1,184 5,367
100-10 New York Total Expenses 433 488 518 430 1,869
100-10 Massachusetts Margin 1,237 1,533 1,741 1,224 5,735
100-10 Massachusetts Total Expenses 164 155 149 162 630
100-10 Florida Margin 372 442 494 375 1,683
100-10 Florida Total Expenses 174 192 200 175 741
100-10 Connecticut Margin 567 481 425 557 2,030
100-10 Connecticut Total Expenses 217 197 184 215 813
100-10 New Hampshire Margin 213 249 276 209 947
100-10 New Hampshire Total Expenses 139 149 155 137 580
100-10 California Margin 1,199 1,416 1,568 1,184 5,367
100-10 California Total Expenses 433 488 517 431 1,869
100-10 Oregon Margin 270 203 202 216 891
100-10 Oregon Total Expenses 193 183 176 180 732
```

The following is the same report without TABDELIMIT:

```
<PAGE (Scenario)
<COLUMN (Year)
<ROW (Product, Market, Measures)
{ROWREPEAT}
<ICHILDREN Year
<DIMBOTTOM Product
<DIMBOTTOM Market
<CHILD Profit
 !
```

Without TABDELIMIT, the report looks like this (example truncated):

```
                                    Scenario
                                Qtr1     Qtr2     Qtr3     Qtr4     Year
                            ======== ======== ======== ======== ========

100-10 New York Margin         1,199    1,416    1,568    1,184    5,367
100-10 New York Total Expenses   433      488      518      430    1,869
```

TEXT

Inserts text or other information on a new line in the report. You specify the character position (*charPosition*) to begin the text along with the text (*text*) that you want to display. The command can accept multiple sets of *charPosition* and *text* arguments.

In addition to text, you can use this command to insert special information based on keywords into the report. These keywords begin with a "*" and must be entered exactly. For example, you can display the current date and time, the page number, or information such as user name and application.

The following list presents the keywords and associated display information.

- APPNAME: Name of application
- ARBOR: Version information
- CALC: All or part of a calculated row Optionally, the CALC keyword can include an integer to designate a data column that is to be displayed. For example, {`TEXT 25 "*CALC 2""TotSales"}` would display the column 2 value of the calculated row "TotSales" starting at character position 25, using the current column format settings in effect for column 2.

  > **Note:**
  >
  > Names columns are not allowed.

- COLHDR *number1 number2*: Displays the column heading members from the current default heading. You can indicate which rows of the column header members you want to display and which members in the row following the keyword.

  number1 selects the row of column members and *number2* selects the member within the row. If you specify just `*COLHDR` or `*COLHDR` with *number1*, the column heading members can not be combined with any other text on the same line. Furthermore, the position of the text is ignored (the header line will automatically be lined up with the existing data column setup), unless you specify both *number1* and *number2*. For example, `*COLHDR 2` would display the second row of column heading members in normal position over the data columns. `*COLHDR 2 5` would display the 5th column member from the second row of column heading members. This command is usually used with SUPHEADING or SUPCOLHEADING.

  Using both *number1* and *number2*,

  ```
  TEXT 25 "*COLHDR 2 3"
  ```

  would display the third member of the column heading range from the second row of column members starting in position 25.

  Generally all column heading rows after the first level in symmetric reports have repeating groups of the same range of members.

  The *number2* specified refers to the member in the basic group of repeating members. For example, if Qtr1 Qtr2 and Qtr3 are the basic group which repeats in the second level column heading, the value for *number2* can range from 1 to 3. Just because the group repeats 2 or 3 times does not mean that *number2* can range up to 6 or 9. In this example, any *number2* higher than 3 would be interpreted as trying to access a calculated column header.

Calculated column headers may also be accessed by the *COLHDR option. If a report has, for example, 3 calculated columns, the *number2* which is used to access any particular level of the calculated column name depends on the number of members in the primary column header group for that heading level. In the previous example, where the second column heading line contained three members (Qtr1, Qtr2, and Qtr3), the second-level calculated column headings would be accessed with *number2* set to 4, 5, or 6 (assuming only one row names column). Again, it does not matter how many times Qtr1, Qtr2, and Qtr3 may have been repeated on the column heading line-there are still only three members of the primary column header group.

For example, if the first calculated column defined is "YTD~PCT~TOTAL", then the second level header "PCT" could be printed with `TEXT 10 "*COLHDR 2 4"`, assuming once again that the primary column heading group on level 2 had three members and only one row name dimension. Refer to ORDER for more information about column numbering.

The ORDER command does not affect the parameters for selecting the headers. The *number2* value is based on the original column order without regard to any reordering or truncation of columns with ORDER or FIXCOLUMNS.

- COLHDRFULL, which is the full column heading along with underlines of the column headings and a 1 line skip. The position is ignored with this keyword (the headers and underlines will be aligned automatically over the data columns as currently set up)and it can not be combined with any other text on the same line.
- CURRENCY, which is the currency conversion label which indicates which currency the data values have been converted to at report time with the CURRENCY command. Usually used with SUPCURHEADING.
- DATA, which is used to display data rows. If the command does not include a column designator, it will display all data starting at the character position. If a column number is included, only that column will be displayed. See *CALC above.
- DATE, which is the date the report was generated.
- DATETIME, which is the date followed by the time the report was generated.
- DBNAME, which is the name of the data base within the application.
- EDATE, which is the date in European (dd/mm/yy) format.
- EDATETIME, which is the date in European (dd/mm/yy) format followed by the time. Time is in 24-hour format, as hour:minute:second; for example, 14:35:02.
- MACHINE, which is the network name for the machine that is running the Essbase Server.
- PAGEHDR *number*: Displays the default page member heading. *number* indicates which specific page members you wish to display following the keyword. The page member text can only be combined with other text on the same line if *number* is specified. For example, `TEXT C *PAGEHDR 2` would display only the second page member from the page heading members from the current default page heading. Usually used with SUPHEADING or SUPPAGEHEADING.
- PAGENO: Page number for the current page.
- PAGESTRING: Page number preceded by the text "Page:".
- TIME: Time the report was generated.
- TIMEDATE: Time followed by the date the report was generated.
- TIMEEDATE: Time followed by the European format (dd/mm/yy) date.
- USERNAME: Name of the user generating the report.

Syntax

```
{TEXT charPosition "text " [ charPosition "text" ... ]}
```

Parameters

charPosition
Character position on the line to start the text specified in the next *text* argument. When multiple sets of *charPosition*s and text can be specified, successive *charPosition*s need not be in ascending order. If the positions of two text strings cause an overlap, the last overwrites the first. "Last" is determined by left-right order in the TEXT statement, not by *charPosition*.

text
Text to add to the report. Commas, tabs and multiple spaces are ignored. Maximum length: 500 characters.

Notes

- TEXT is an output command.
- *n* must be an integer greater than or equal to zero or the letter c for centered. (If you specify *n* as zero, the line starts at the left margin.) You must specify a value for *n*.
- TEXT does not wrap the text specified in "*text*".
- You can use the * (asterisk) character to add report keywords, such as *CALC and *TIME. If * precedes an invalid keyword, Essbase displays the text that follows.

Example

- Adding the text "Golden State Bottling Division" 27 spaces from the left margin of the report. This example is based on Demo Basic.

  ```
  {TEXT 27 "Golden State Bottling Division" }
  ```

- The following report lists several Examples of the TEXT command.

  The first set of TEXT commands is defined in the custom heading of the report which is displayed at the top of every page.

  - The command { TEXT 2 "*DATETIME" C "Annual Report" 65 "*PAGESTRING" SKIP } displays the date and time starting at character position 2 of the first line of the heading, centers the text "Annual Report" in the middle of the line, and displays the text "Page" followed by the actual page number starting at character position 65 of the first line.
  - The second line of the heading is defined by the command { TEXT 2 "City: " 12 "*PAGEHDR 1" } which displays the text "City:" starting a character position 2 and then displays the first page member for the page in the report. As per the first member in the PAGE command, these members are always from the Market dimension.
  - The command { TEXT 2 "Account: " 12 "*PAGEHDR 2" SKIP } for the third line of heading displays the text "City" at character position 2 followed by the page heading member from the Accounts dimension.

  The TEXT commands at the end of the report display summary information about the report.

- The command { TEXT 2 "Prepared by: " 18 "*USERNAME" } displays the text "Prepared by:" at character position 2 followed by the name of the user who generated the report at character position 18.
- For the next line, the command { TEXT 2 "Server Version: " 18 "*ARBOR" } displays the text "Server Version:" at character position 2 followed by the version information.
- The third line uses the command { TEXT 2 "Application: " 18 "*APPNAME" } to display the text "Application:" at character position 2 followed by the application name.
- The final line uses the command { TEXT 2 "Database: " 18 "*DBNAME" } to display the text "Database:" at character position 2 followed by the database name.

```
{ STARTHEADING
  SUPPAGEHEADING
  TEXT 2 "*DATETIME" C "Annual Report" 65 "*PAGESTRING" SKIP
  TEXT 2 "City: " 12 "*PAGEHDR 1"
  TEXT 2 "Account: " 12 "*PAGEHDR 2" SKIP
  ENDHEADING }

<PAGE (Market, Accounts)
Chicago Sales

            <COLUMN (Scenario, Year)

            Actual
            <CHILDREN Year

<ROW Audio

{ SKIP 2 "Prepared by: " 18 "*USERNAME" }
{ TEXT 2 "Server Version: " 18 "*ARBOR" }
{ TEXT 2 "Application: " 18 "*APPNAME" }
{ TEXT 2 "Database: " 18 "*DBNAME" }
     !


09/15/03 14:14:59          Annual Report                        Page: 1

  City:     Chicago
  Account:  Sales

                    Qtr1     Qtr2     Qtr3     Qtr4
                ======== ======== ======== ========

Stereo             2,591    2,476    2,567    3,035
Compact_Disc       3,150    3,021    3,032    3,974
  Audio            5,741    5,497    5,599    7,009

  Prepared by :   Admin
  Server Version: Gemini Alpha - 9/6/95 [Fri Sep 15 14:14:59 1995]
  Application:    Demo
  Database:       Basic
```

The remaining examples of the TEXT command are based on the following report heading:

```
                              Chicago Sales

              Actual                  Budget
   Qtr1     Qtr2     Qtr3     Qtr1      Qtr2      Qtr3
======= ======= ======= ======= ======== ========
```

- `{ TEXT 10 "*COLHDR 2" }`

  would produce the following line:

  ```
  Qtr1 Qtr2 Qtr3 Qtr1 Qtr2 Qtr3
  ```

- `{ TEXT 10 "*COLHDR 2 3" }`

  would produce the following text at position 10:

  ```
                  Qtr3
  ```

- `{ TEXT 10 &QUOT;*COLHDR 1 2&QUOT; }`

  would produce the following text at position 10:

  ```
                Budget
  ```

- `{ TEXT 10 &QUOT;COLHDRFULL&QUOT; }`

  would produce the following lines of text regardless of the value of *charPosition*:

  ```
              Actual                      Budget
     Qtr1     Qtr2     Qtr3      Qtr1      Qtr2      Qtr3
  =======  =======  =======  =======  ========  ========
  ```

Related Topics

- SUPCOLHEADING
- SUPPAGEHEADING

TODATE

The TODATE command converts date strings to numbers that can be used to extract data output for a specific time period. TODATE converts date strings into the number of seconds elapsed since midnight, January 1, 1970.

Syntax

`<TODATE (formatString, dateString)`

Parameters

formatString
The date string format, either "mm-dd-yyyy" or "dd-mm-yyyy".

dateString
The date string.

Notes

- If you specify a date that is earlier than 01-01-1970, this command returns an error.
- The latest date supported by this command is 12-31-2037.

Example

```
<TODATE("dd-mm-yyyy","15-10-2002")
```

Related Topics

- ATTRIBUTE
- WITHATTR

TOP

Returns rows with the highest values of a specified data column.

Syntax

```
<TOP ([<rowgroupDimension>,] <rows>, <column>)
```

Parameters

<rowgroupDimension>
Optional. Row grouping dimension that determines the rows to sort as a set. The default is the inner row.

<rows>
Positive integer that specifies the number of rows to be returned; must be greater than 0.

<column>
@DATACOLUMN (<*colNumber*>) | @DATACOLUMN (<*colNumber*>)
where <*colNumber*> is the target column number; must be between 1 and the maximum number of columns in the report.

Notes

This command sorts the result set by the value of the specified data column in descending order.

Rows containing `#MISSING` values in the sort column are discarded from the result set before TOP is applied. You can use TOP and BOTTOM, ORDERBY and RESTRICT in the same report script, but you can use each command only once per report. If you repeat the same command in the same report script, the second command overwrites the first. Place global script formatting commands before a PAGE, COLUMN command or associated member (for example, <ICHILDREN or <IDESCENDANTS). Avoid using row formatting commands with TOP.

If any of the ORDERBY, TOP, BOTTOM, or RESTRICT commands coexist in a report script, the row group dimension <*rowgroupDimension*> should be the same. This prevents confusion about the sorting and ordering of rows within a row group. Otherwise, an error is issued. The

ORDERBY, TOP, and BOTTOM commands sort a report output by its data values. The RESTRICT command restricts the number of valid rows for the report output. Their execution order is:

1. Any sorting command that sorts on member names (for example <SORTDESC or <SORTASC)
2. RESTRICT
3. TOP and BOTTOM
4. ORDERBY

This order applies regardless of the order in which the commands appear in the report script. For an example that uses TOP, BOTTOM, ORDERBY, and RESTRICT together, see the entry for the BOTTOM command.

You can configure the size of the internal buffers used for storing and sorting the extracted data. The following settings affect the way the RESTRICT, TOP, and BOTTOM commands work:

- Retrieval Buffer Size (a database setting)
- Retrieval Sort Buffer Size (a database setting)

Example

The following report script is designed for the Demo Basic cube, available in the gallery.

```
<Sym
<Column (Scenario, Year)
Actual Budget
Jan Dec
<Top ("Measures", 5, @DATACOLUMN(4))
<Row (Measures, Market, Product)
{SupMissingRows}

<Idescendants Profit
<Ichildren Market
<Idescendants Product
 !
```

The report script produces the following report:

```
                                    Actual            Budget
                                  Jan      Dec      Jan      Dec
                                 ====== ========  ======== ========

Sales     Market   Product      31,538   33,342   31,538   30,820
  Margin  Market   Product      17,378   18,435   17,378   17,360
COGS      Market   Product      14,160   14,907   14,160   13,460
Sales     Central  Product      10,346   10,662   10,346   10,310
          West     Product      10,436   11,116   10,436   10,200
```

Related Topics

- RESTRICT
- ORDERBY

- BOTTOM

UCHARACTERS

Underlines all non-blank characters in the preceding row.

To underline names cleanly, the UCHARACTERS command treats a single space between two non-space characters as a character to underline. For example, in the name Sales_Revenue, the underscore is changed to a space on output, UCHARACTERS changes the space to "_". Default underline character "=" is used.

Syntax

```
{ UCHARACTERS ["char"] }
```

Parameters

"char"
Optional. A single-byte character, enclosed in quotation marks, used as the underline character.

Notes

Double-byte characters are not supported.

Example

The following example is based on Demo Basic.

{UCHARACTERS} underlines all the characters in the previous (Television) row.

```
<PAGE (Market, Accounts, Scenario)
Chicago Sales Actual

      <COLUMN (Year)
      <ICHILDREN Year

<ROW (Product)
Television

{ UCHARACTERS }

VCR
Compact_Disc
     !
```

This example produces the following report:

```
                              Chicago Sales Actual

                    Qtr1     Qtr2     Qtr3     Qtr4     Year
                ======== ======== ======== ======== ========

Television         4,410    4,001    4,934    6,261   19,606
==========         =====    =====    =====    =====   ======
```

```
VCR                3,879    3,579    4,276    4,877   16,611
Compact_Disc       3,150    3,021    3,032    3,974   13,177
```

Related Topics

- UCOLUMNS
- UDATA
- UNDERLINECHAR
- UNDERSCORECHAR

UCOLUMNS

Underlines all columns, including names and data, in the preceding row.

The underline width is based on column width. If *char* is provided, it is used as the underline character. Otherwise the default character "=" is used.

Syntax

```
{ UCOLUMNS ["char"] }
```

Parameters

"char"
Optional. A single-byte character, enclosed in quotation marks, that creates an underline character.

Notes

Double-byte characters are not supported.

Example

The command {UCOLUMNS} in the following report underlines all the columns in the previous row which is the Television row.

```
<PAGE (Market, Accounts, Scenario)
Chicago Sales Actual

      <COLUMN (Year)
      <ICHILDREN Year

<ROW (Product)
Television

{ UCOLUMNS }

VCR
Compact_Disc
     !
```

This example produces the following report:

```
                    Chicago Sales Actual

                Qtr1   Qtr2   Qtr3   Qtr4    Year
              ======= ====== ====== ====== =======

Television     4,410  4,001  4,934  6,261  19,606
============ ======= ====== ====== ====== =======
 VCR           3,879  3,579  4,276  4,877  16,611
Compact_Disc   3,150  3,021  3,032  3,974  13,177
```

Related Topics

- UCHARACTERS
- UDATA
- UNDERLINECHAR

UDA

Selects and reports on members based on a common attribute, defined as a UDA (user-defined attribute).

Syntax

```
<UDA (dimName, udaStr)
```

Parameters

dimName
The dimension associated with the *udaStr*.

udaStr
Name of the user-defined attribute.

Notes

- If a UDA is associated with shared members, only the first instance is returned. If you want to include all instances, use the SUDA command.
- You can use the <UDA command as a standalone command or as a selection command inside the LINK statement.
- You cannot use attributes as arguments.

Example

The following example selects products that are sweet:

```
<UDA (product, "Sweet")
```

The following example uses the UDA command within a LINK statement to select level 0 products that are sweet:

```
<LINK(<UDA(product, "Sweet") AND <LEV(product, 0))
```

> **Note:**
>
> If the Product dimension includes shared members with the UDA "Sweet", this command selects only the first instance in the outline of the shared member.

Related Topics

- SUDA

UDATA

Underlines data columns for a row, while not underlining the row name columns.

The underline width is based on column width. If *char* is provided, it is used as the underline character. Otherwise, the default underline character is "=".

Syntax

```
{ UDATA ["char"] }
```

Parameters

"char"
Optional. A single-byte character, enclosed in quotation marks, used as the underline character.

Notes

Double-byte characters are not supported.

Example

The command {UDATA} in the following report underlines all the data in the previous row which is the Television row.

```
<PAGE (Market, Accounts, Scenario)
Chicago Sales Actual

      <COLUMN (Year)
      <ICHILDREN Year

<ROW (Product)
Television
{ UDATA }
VCR
Compact_Disc
     !
```

This example produces the following report:

```
                Chicago Sales Actual
```

```
                 Qtr1   Qtr2   Qtr3   Qtr4    Year
               ======= ====== ====== ====== =======

Television       4,410  4,001  4,934  6,261  19,606
               ======= ====== ====== ====== =======
VCR              3,879  3,579  4,276  4,877  16,611
Compact_Disc     3,150  3,021  3,032  3,974  13,177
```

Related Topics

- UCHARACTERS
- UNDERLINECHAR

UNAME

Underlines the row name columns in the preceding row while not underlining the data columns.

If *char* is provided, then it will be used as the underline character. Otherwise, the default underline character is "=".

Syntax

```
{ UNAME ["char"] }
```

Parameters

"char"
Optional. A single-byte character, enclosed in quotation marks, used as the underline character.

Notes

Double-byte characters are not supported.

Example

The following report script is designed for the Demo Basic cube, available in the gallery. The command `{ UNAME "*"}` underlines with asterisks the row member names in the previous row, which is the Television row.

```
<PAGE (Market, Accounts, Scenario)
Chicago Sales Actual

      <COLUMN (Year)
      <ICHILDREN Year

<ROW (Product)

Television
{ UNAME "*"}

VCR
Compact_Disc
     !
```

This example produces the following report:

```
                              Chicago Sales Actual

                     Qtr1     Qtr2     Qtr3     Qtr4     Year
                 ======== ======== ======== ======== ========

Television          4,410    4,001    4,934    6,261   19,606
***************
VCR                 3,879    3,579    4,276    4,877   16,611
Compact_Disc        3,150    3,021    3,032    3,974   13,177
```

Related Topics

- UCHARACTERS
- UDATA

UNAMEONDIMENSION

Underlines the row member names in a row whenever a member from the same dimension as the specified member changes.

Syntax

```
{ UNAMEONDIMENSION mbrName }
```

Parameters

mbrName
Single member representing a dimension. When a new member from this dimension is output, an underline appears under all row names in the previous line.

Notes

With the ROW command, you can display members from several dimensions in columns on the side of the report. At least one member changes from one of these dimensions for each row of the report. A single report can have several UNAMEONDIMENSION commands to underline row member names, based on different dimensions which change. When combined with UNAMEONDIMENSION and PAGEONDIMENSION, UNAMEONDIMENSION is processed first, followed by SKIPONDIMENSION and PAGEONDIMENSION in order.

Example

The following example is based on Demo Basic.

```
<PAGE (Market, Accounts)
Chicago Sales
      <COLUMN (Scenario)
      Actual
<ROW (Year, Product)
{ UNAMEONDIMENSION Year }
<ICHILDREN Year
<ICHILDREN Audio
```

```
!
```

This example produces the following report:

```
=============== ================
                   Chicago Sales Actual

Qtr1            Stereo              2,591
                Compact_Disc        3,150
                  Audio             5,741
=============== ================
Qtr2            Stereo              2,476
                Compact_Disc        3,021
                  Audio             5,497
=============== ================
Qtr3            Stereo              2,567
                Compact_Disc        3,032
                  Audio             5,599
=============== ================
Qtr4            Stereo              3,035
                Compact_Disc        3,974
                  Audio             7,009
=============== ================
  Year          Stereo             10,669
                Compact_Disc       13,177
                  Audio            23,846
```

Related Topics

- NOPAGEONDIMENSION
- NOSKIPONDIMENSION
- PAGEONDIMENSION
- SKIPONDIMENSION

UNDERLINECHAR

Sets the default underline character displayed in a report.

You can use any graphic character that you can generate in the text editor used to define the report. In some editing tools, you can generate a graphic underline by holding the ALT key down while typing 196 on the numeric keypad and then releasing the ALT key. For a double graphic underline, type 205. You must use a font with these graphic characters if the report is to print correctly. Default underline character "=" is used.

Syntax

```
{ UNDERLINECHAR ["char"] }
```

Parameters

"char"
A single-byte character, enclosed in quotation marks, for the new underline character.

Notes

Double-byte characters are not supported.

Example

```
{UNDERLINECHAR "-"}
```

sets the character used when underlining to a single dash.

Related Topics

- UCHARACTERS
- COLUMN
- UDATA

UNDERSCORECHAR

Replaces the _ (underscore) character in a member name with another character.

Reports generated with this command may not be suitable for reloading into the database as report format files. Member names may no longer match the outline if the underscores are replaced.

Syntax

```
{ UNDERSCORECHAR "char"}
```

Parameters

"char"
Single character, enclosed in quotation marks, that displays in place of underscore.

Notes

UNDERSCORECHAR is a setting command.

Example

```
{UNDERSCORECHAR " "}
```

replaces all underscores with spaces (for example, member name New_York would appear as New York in the final report.)

WIDTH

Specifies the width of columns in a report.

If the WIDTH command is followed by *number* with no column selections, *number* sets the width for all data columns. Otherwise, the width is set for each data column listed in the command. Column numbers are assigned starting at 0 for the first row-name column, incrementing by one for each row-name column, data column, and calculated column, in that order. The tilde character (~) follows member names or values that must be truncated to fit in the column to indicate part of the name or value is not displayed. If possible, space from adjacent columns is used to avoid truncating. The widths of names columns may be adjusted if their column numbers (0,1,...) are specifically included in the command. Alternatively, the NAMEWIDTH command may be used.

If the WIDTH command is not used, columns are wide enough to fit the widest value.

Syntax

```
{ WIDTH number [ column1 [ column2 [ columnN ] ] ] }
```

Parameters

number
New column width in characters.

column1column2columnN
Optional. Numbers designating the columns to resize, separated by spaces. Values: between 0 and 161, where 0 is the first row-name column. If column-numbers are not specified, all columns are resized to the width indicated by *number*.

Notes

- The value of *number* must be zero or a positive integer.
- WIDTH is a column formatting command. If you specify columns in the WIDTH command *before* designating them with a member selection, Essbase expands the report to that number of columns. See the information on "Column Formatting Commands".
- After members for the report specification are selected, the numbers specified should not exceed the number of *columnN*.

Example

The following example is based on Sample Basic.

```
<PAGE (Measures, Market)
Illinois Sales
<SYM
{WIDTH 7}
{WIDTH 20 0}
     <COLUMN (Scenario, Year)
     Actual Budget Scenario
     Jan Feb Mar
<DESCENDANTS "100"
     !
```

Which resizes all data columns to a WIDTH of seven and the row name label column (column 0) to a WIDTH of 20.

```
                                                Sales Illinois
```

```
                          Actual                Budget
Scenario
                        Jan    Feb    Mar    Jan    Feb    Mar    Jan
Feb    Mar
                     ====== ====== ====== ====== ====== ====== ======
======

100-10                  345    354    367    360    370    380    345
354    367
100-20                  234    254    267    240    260    280    234
254    267
100-30               #Missi #Missi #Missi #Missi #Missi #Missi #Missi
#Missi
```

Related Topics

- NAMEWIDTH

WITHATTR

Specifies the characteristics of a base-dimension member that match the specified values in a report script. You must create attribute dimensions in the outline and associate them with a base dimension before you use WITHATTR.

Syntax

```
<WITHATTR (dimName, "operator", value)
```

Parameters

dimName
Single attribute dimension name.

"operator"
Operator specification, which must be enclosed in double quotes ("").
The supported operators are:

- > (Greater than)
- >= (Greater than or equal to)
- < (Less than)
- <= (Less than or equal to)
- = = (Equal to)
- <> or != (Not equal to)
- IN (Within a specified range)

> **Note:**
>
> These operators may behave differently depending on the attribute type with which you use them. See the table in Examples for more information.

value
Value that, in combination with the operator, defines the condition that must be met. Can be an attribute member specification, a constant, or a date-format function (for example, <TODATE).

Notes

This command specifies two or more attribute dimension tags, which are associated with a base dimension. If you use the <WITHATTR syntax, the command is applied only to a specific query.

Example

Example 1

The following table shows examples, based on the Sample Basic database, for each type of operator:

Table 4-5 <WITHATTR Operator Examples

Operator	Example	Result
>	<WITHATTR(Population,">","18000000")	Returns New York, California, and Texas
>=	<WITHATTR(Population,">=",10000000) where 10,000,000 is not a numeric attribute member, but a constant	Returns New York, Florida, California, Texas, Illinois, and Ohio
<	<WITHATTR(Ounces,"<","16")	Returns Cola, Diet Cola, Old Fashioned, Sasparilla, and Diet Cream
<=	<WITHATTR("Intro Date","<=",<TODATE("mm-dd-yyyy","04-01-1996"))	Returns Cola, Diet Cola, Caffeine Free Cola, and Old Fashioned
= =	<WITHATTR("Pkg Type","= =",Can)	Returns Cola, Diet Cola, and Diet Cream
<> or !=	<WITHATTR(Caffeinated,"<>",True)	Returns Caffeine Free Cola, Sasparilla, Birch Beer, Grape, Orange, Strawberry
IN	<WITHATTR("Population","IN",Medium)	Returns Massachusetts, Florida, Illinois, and Ohio

Example 2

The following report script

```
<PAGE (Product, Measures, Scenario)
Florida Sales Actual

 <COLUMN (Year)
 <ICHILDREN Year

<ROW  (Market)
```

```
<WITHATTR(Population IN Large)
 !
```

returns on rows only those members of Market whose Population attributes map to ranges defined as Large:

```
                              Product Sales Actual

                    Qtr1     Qtr2     Qtr3     Qtr4     Year
                ======== ======== ======== ======== ========

New York           7,705    9,085    9,325    8,583   34,698
California        11,056   12,164   13,073   11,149   47,442
Texas              4,505    4,589    4,807    4,402   18,303
```

Related Topics

- <ATTRIBUTE
- <TODATE

WITHATTREX

Specifies the characteristics of a base-dimension member that match the specified values in a report script. You must create varying attribute dimensions in the outline and associate them with a base dimension before you use WITHATTREX in a report script.

Syntax

```
<WITHATTREX (dimName, "operator", value,options,startTuple[,endTuple])
```

Parameters

dimName
Single varying attribute dimension name.

"operator"
Operator specification, which must be enclosed in double quotes ("").
The supported operators are:

- > (Greater than)
- >= (Greater than or equal to)
- < (Less than)
- <= (Less than or equal to)
- = = (Equal to)
- <> or != (Not equal to)
- IN (Within a specified range)

value
Value that, in combination with the operator, defines the condition that must be met. Can be an attribute member specification, a constant, or a date-format function (for example, <TODATE).

options
ANY

startTuple[, endTuple]
`(m1, m2, ..., mN)`
Level-0 members from one or more independent dimensions for `attrMbrName` may be part of the input tuple.
Members from all independent dimensions should be listed. If a member is not listed, the member of the same dimension from the current query or calculation context is used.

Notes

This command specifies two or more attribute dimension tags, which are associated with a base dimension. If you use the <WITHATTREX syntax, the command is applied only to a specific query.

Example

```
<withattrex("intro date","<=",<todate("mm-dd-yyyy","04-01-1996"),ANY,(jan),
(jun))


<withattrex(ounces,">","16",ANY,(jan),(jun))
```

Related Topics

- <ATTRIBUTEVA
- <PERSPECTIVE
- <TODATE

ZEROTEXT

Replaces zero data values with a text string if a zero data value is output.

Syntax

```
{ ZEROTEXT [ "text" ] }
```

Parameters

text
Optional. String, in quotation marks, to use in place of 0.

Notes

All data values less than .00000000000001 and greater than -.00000000000001 are treated as 0, as well as all data values that would be displayed as 0, regardless of their true value.

Default Value

If you do not specify text, the default 0 is restored.

Example

```
{ZEROTEXT "-"}
```

changes a 0 value to -.

Related Topics

- MISSINGTEXT

Report Writer Limits

Learn about the Essbase report writer query limit, and limits for specific report writer commands.

Report Writer Query Limit

Report Writer supports regions that expand to no larger than 2^{64}-1 cells.

If a report would expand to a larger-than-supported region, one of the following internal errors is returned:

```
1001632 "Internal Error: Mathematical operation resulted in integer overflow/
underflow; reduce the size of the report region"

1200646 "Internal error: Set is too large to be processed. Set size exceeds
2^64 tuples"

1200713 "Internal Error: Mathematical operation results in integer overflow/
underflow. Reduce the size of the query region"

1200762 "Internal Error: Mathematical operation results in wide integer
overflow/underflow; reduce the size of the query region"

1204006 "Expanded query grid size does not fit into 64-bit integer. Change
the query or simplify the outline model to include less formula dependencies."
```

Report Writer Command Limits

Command	Limit
CALCULATE COLUMN	No more than 50 column calculations can be defined at any one time in the report.
CALCULATE ROW	Limited to returning no more than 500 rows.